DOCUMENT RESUME

ED 251 090 IR 050 912

TITLE	Determining Indirect Cost Rates in Research Libraries. SPEC Kit 34.
INSTITUTION	Association of Research Libraries, Washington, D.C. Office of Management Studies.
PUB DATE	Jul 77
NOTE	108p.; For updated kit, see IR 050 937.
PUB TYPE	Collected Works - General (020) -- Guides - Non-Classroom Use (055) -- Reports - Research/Technical (143)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	*Academic Libraries; Higher Education; *Library Expenditures; Library Research; Library Surveys; *Research Libraries; *Worksheets
IDENTIFIERS	*Indirect Costs

ABSTRACT

This kit prepared by the Association of Research Libraries (ARL) contains 15 primary source documents on determining indirect cost rates in research libraries. The kit comprises: (1) six library cost studies and surveys, "Allocation of Library Expenditures to Research and Instruction" (University of Pennsylvania), "Sampling of Current Monograph and Periodical Payments; Assignment to Undergraduate and Faculty/Graduate Population" (Washington University), "Library Indirect Costs Study for Fiscal Year 1976" (Washington University), "Libraries Use Survey" (Cornell University), "Libraries and Audio-Visual Center Cost Allocation Study (Background, Methodology, and Cost Findings)" (Purdue University), and "Allocation of the Library Cost Pool" (Stanford University); (2) five worksheets, "Library Expense and Use Information Endowed 1975-76" (Cornell University), "Fiscal Year 1973-74 Allocation of Library" (University of Arizona), "Indirect Cost Computation Based on 1975-76 Actual Costs and Library Usage Questionnaire--Research Agreements" (University of Michigan), "Statement of Library Expenses for the Year Ended August 31, 1976" (Texas A&M University), and "Library Costs" (University of Utah); and (3) four documents containing general information from the National Association of College and University Business Officers (NACUBO) and the Department of Health, Education, and Welfare (HEW), "Cost of Federal Research Performed by Universities: A Call for Equity" (NACUBO Professional File), "Diagram Showing Three Primary Cost Categories for Major Universities" (NACUBO), "Sample Indirect Cost Proposal Format--Long Form" (HEW), and selected portions of Federal Management Circular 73-8, "Principles for Determining Costs Applicable to Research and Development under Grants and Contracts with Educational Institutions" (HEW). (THC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

July 1977
Systems and Procedures Exchange Center

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED251090

Determining Indirect Cost Rates in Research Libraries

Kit 34

IR050912

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Maxine Sitts
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

The Systems and Procedures Exchange Center (SPEC) is a mechanism for sharing management techniques and expertise. The Center collects data and documentation related to academic and research library management and makes the material available to the library community. The Systems and Procedures Exchange Center is operated by the Association of Research Libraries/ Office of Management Studies/ 1527 New Hampshire Avenue, N.W./ Washington, D.C. 20036/ Telephone: (202)232-8656.

DETERMINING INDIRECT COST RATES IN RESEARCH LIBRARIES

KIT NO. 34 - JULY 1977

TABLE OF CONTENTS

LIBRARY COST STUDIES AND SURVEYS

Allocation of Library Expenditures to Research and Instruction - University of Pennsylvania 6 pp.

Sampling of Current Monograph and Periodical Payments; Assignment to Undergraduate/and Faculty/Graduate Population - Washington University 3 pp.

Library Indirect Costs Study for Fiscal Year 1976 - Washington University 5 pp.

Libraries Use Survey - Cornell University 11 pp.

Libraries and Audio-Visual Center Cost Allocation Study - Purdue University (Background, methodology, and cost findings) 25 pp.

Allocation of the Library Cost Pool--Stanford University 11pp.

WORKSHEETS

Library Expense and Use Information Endowed 1975-76 - Cornell University 2 pp.

Fiscal Year 1973-74 Allocation of Library - The University of Arizona 2 pp.

Indirect Cost Computation Based on 1975-76 Actual Costs and Library Usage Questionnaire - Research Agreements - The University of Michigan 2 pp.

Statement of Library Expenses for the Year Ended August 31, 1976 - The Texas A&M University 2 pp.

Library Costs - University of Utah 8 pp.

GENERAL INFORMATION FROM THE NATIONAL ASSOCIATION OF COLLEGE AND UNIVERSITY BUSINESS OFFICERS (NACUBO) AND DEPARTMENT OF HEALTH, EDUCATION AND WELFARE (HEW)

Cost of Federal Research Performed by Universities: A Call for Equity - NACUBO Professional File 9 pp.

Diagram Showing Three Primary Cost Categories for Major Universities - NACUBO 1 pp.

Sample Indirect Cost Proposal Format (Long Form) - HEW 1 p.

Federal Management Circular 73-8 (selected portion) 5 pp.

UNIVERSITY of PENNSYLVANIA
PHILADELPHIA 19104

The Charles Patterson Van Pelt Library

COST STUDIES
U. OF PENNSYLVANIA
6 PP.

February 3, 1975

To: J. Jerrold Jackson
Comptroller

From: Jim Michalko and Toby Heidtmann

Enclosed is a table of library expenditures for calendar 1974 divided between costs for instruction and costs for research. A memo is also attached that explains the refinements in this analysis compared to the earlier Haas study.

The new methodology provides for a more detailed allocation and allows for easier updating from year to year. Hopefully you will find it helpful. We have not addressed ourselves to the problem of dividing research costs into organized and departmental research. Such a division requires further explanation and guidance from your office.

cc Bernard Ford
Richard DeGennaro

BEST COPY AVAILABLE

Allocation of library expenditures
to Research and Instruction

This memo outlines the methodology and reports the results of the latest library effort at allocating expenditures between research and instructional activities. The last analysis was done in 1966. Allocations for the years 1967-73 were performed using the results of that study. The updated study relies in part on some conclusions reached in 1966 but adds a number of refinements. These refinements include analysis of borrowing statistics collected on the circulation system, interviews with departmental librarians to determine time spent in reader service and technical processing activities, and individual assessments of borrowing in those libraries not on the computer system.

Method

1) Library expenditures for calendar 1974 were gathered.

   --These figures were arrived at using the year-end summaries from the comptroller and the current year's December 1974 summaries.

2) Total expenditures for each library were allocated to one of four categories- Administration, Readers' Services, Technical Services and Supply/Operating Expense.

   --Accounts were identified as contributing to one of these categories and the total spent assigned on that basis. A list of categories with corresponding accounts is attached.

   --Salaries and benefits were assigned to Administration, Readers' Service or Technical Service on the basis of individual duties. In smaller libraries where duties overlap the librarians' breakdown of activities determined the portions assigned to the various categories.

3) Money spent on technical services was allocated to research or instructional

purposes using a 62% and 38% split.

--This split was the result of large samples taken during the 1966 study. Book and periodical buying habits were judged not to have changed significantly during the intervening period.

4) Money spent on reader services was allocated to research or instructional purposes on the basis of the computer produced circulation statistics for 1974 or on the sampling and observation of departmental librarians.

--Borrowing by faculty members and graduate students (other than first professional degree candidates) was attributed to research activities.

--Borrowing by undergraduate and first professional degree students was assigned to instructional activities.

--Although circulation statistics represent a refinement in the allocation of readers' services expenses they do not totally or accurately reflect all types of library use. Several studies at other University libraries, however, suggest a stable relation between borrowing and in-house use of materials.

5) General Administrative costs and Supply/Operating expenses were allocated to research and instruction in the same proportions as the total Reader Service and Technical Service allocations.

6) Costs incurred in operating the Rosengarten Reserve Library as well as costs of securing music instruction supplies were directly allocated to Instructional purposes. Book expenses and operating costs of the Special Collection were directly allocated to Research activities.

Notes

1) Biddle Law Library, the Medical School Library and the Archives and Records

Center were not included in this analysis.

2) Costs related to Plant incurred by the University were left out of the study as were general University Administrative costs related to library operations.

Conclusions

The total 1974 expenditures for library operations when allocated in this manner show that 43.7% of the dollars support instructional activities and 56.3% underwrite research efforts. These figures using the new methodology are comparable to the 1973-74 fiscal year breakdown of 42.8% instruction and 57.2% research.

James Michalko
and
Toby Heidtmann

Allocation of Library Expenditures Between Instruction and Research

	Amount Expended	Research %	Research Amount	Instruction %	Instruction Amount
VAN PELT LIBRARY					
Reader Service	653,607	47	307,195	53	346,412
Technical Service	1,551,268	62	961,786	38	589,482
FINE ARTS LIBRARY					
Reader Service	65,590	61	40,010	39	25,580
Technical Service	104,422	62	64,742	38	39,680
Administration	18,212	62	11,219	38	6,993
LIPPINCOTT LIBRARY					
Reader Service	120,329	36	43,318	64	77,011
Technical Service	217,363	62	134,765	38	82,598
Administration	45,608	53	24,035	47	21,573
PENNIMAN LIBRARY					
Reader Service	28,886	63	18,198	37	10,688
Technical Service	57,761	62	35,812	38	21,949
DEPARTMENTAL LIBRARIES					
Reader Service	102,593	54	55,911	46	46,682
Technical Service	483,214	51	247,045	49	236,168
ROSENGARTEN RESERVE	101,516			100	101,516
RARE BOOK ROOM	128,249	100	128,249		
	3,678,618		2,072,275		1,606,337
GENERAL ADMINISTRATION	282,443	56	159,015	44	123,128
SUPPLY/OPERATING EXPENSES	177,924	56	99,637	44	78,287
	4,138,985	56.3	2,330,937	43.7	1,808,052

ADMINISTRATION	READER SERVICE	TECHNICAL SERVICE	SUPPLY/OPERATING EXPENSE
SALARIES	SALARIES	SALARIES	MISCELLANEOUS SUPPLIES
BENEFITS	BENEFITS	BENEFITS	INSTALLATIONS
DREXEL TUITION	OVERTIME	PRINTING & DUPLICATING	REPAIRS TO EQUIPMENT
TRAVEL	SYSTEMS SUPPLIES	PALINET	COPY EQUIPMENT
OFFICE SUPPLIES	PHOTO SUPPLIES	BINDING	EQUIPMENT (NEW)
DUES	PHOTO SERVICES	BOOKS	TELEPHONE EQPT.
OTHER MISCELLANEOUS	DATA SERVICES		TOLL CHARGES
ADVERTISING	OUTSIDE CONSULTING		BUILDING & GROUNDS
FREIGHT	IBM RENTALS		MAIL
	BELL TELEPHONE		
	COMPUTING SERVICE		

ACCOUNTS CONTRIBUTING TO OVERALL EXPENSE CATEGORIES

COST STUDIES
WASHINGTON UNIV.
3 PP.

WASHINGTON UNIVERSITY LIBRARIES

ST. LOUIS, MISSOURI 63130

November 22, 1976

TO: Jean Salg, Indirect Cost Manager

FROM: John Strecker, Assistant University Librarian

RE: Sampling Study of Library Acquisitions Costs in Relation to Indirect Costs Rate Calculation

I'm forwarding a study which we have conducted in the Library during the last two weeks at the suggestion of the consultant, Mr. David Heuman. The results are interesting to us and, based on our experience, seem valid. We hope this data will be helpful in the indirect costs calculation.

WASHINGTON UNIVERSITY LIBRARIES

SAMPLING OF CURRENT MONOGRAPH AND PERIODICAL PAYMENTS;

ASSIGNMENT TO UNDERGRADUATE/AND FACULTY/GRADUATE POPULATION

Background: The purpose of this study was to determine by a sampling method the parts of acquisition expenditures for the central library and six departmental libraries under central administration to be assigned to undergraduates and to graduate students/faculty. Or, to put it another way, the object was to assign appropriately acquisition expenditures between the teaching and research utilization of library materials, specifically monographs and periodicals, the two principal types of Library materials.

Part I: Periodicals

Sampling was done from a computer printout entitled Washington University Libraries Union List of Periodicals, which represents all titles input into the St. Louis Union List of Periodicals, to June 1, 1975. This print-out lists active (current) and inactive titles published at least twice a year on record in the Serials Department prior to June 1, 1975. About 15,000 titles are listed. Libraries excluded are those of Medical, Dental, and Law Schools.

The print-out contains over 600 pages. The objective was to obtain a representative sample of about 150 currently received titles from this list. The first title on every fourth page was utilized, beginning with page 4. If the first title on the page was cited as non-current, it was skipped over and the next title(s) in succession were examined until a current title was found. The next step was to search the Serials records to find the current prices paid for the journals listed. Prices were found for 133 titles of 167 total titles listed in the original sample. Where prices were not located, the titles were usually received on exchange or by gift.

Next the Chief of the Reference Department and Principal Bibliographer, Mr. Kenneth Nabors, noted in the appropriate column whether a priced title would be primarily used by undergraduates of graduates/faculty. The results were as follows:

Undergraduate Periodical Titles	Number	Percent of Total Titles	Annual Cost	Percent of Total Cost
	39	29.3	$795 .J	16
Graduate/Faculty Periodical Titles	94	70.7	4,163.17	84
TOTALS	133	100.0	$4,958.47	100

Part II: Monographs

Sampling was done from a special Library card file containing main entry cards for newly acquired monographs. This file was set up at the request of faculty to provide information on newly cataloged current acquisitions. The file is organized by Library of Congress classification for books acquired for Olin Library with a separate section for departmental library acquisitions. Titles were selected from this file at random. About one third are foreign language titles, representing approximately the proportion of foreign language book intake in the Library's total acquisition of monographs. Since the file did not contain prices, these were obtained through various bibliographic sources.

From the 150 titles selected at random, prices were found for 146. The Assistant University Librarian for Services noted in the appropriate column whether a title would be primarily used by undergraduates or graduates/faculty. The results were as follows:

Undergraduate Monograph Titles	Number	Percent of Total Titles	Cost	Percent of Total Cost
	58	39.7	$765.10	31.8
Graduate/Faculty Monograph Titles	88	60.3	1,637.33	68.2
Totals	146	100.0	$2,402,43	100.0

WASHINGTON UNIVERSITY LIBRARIES

ST. LOUIS, MISSOURI 6313C

COST STUDIES
WASHINGTON UNIV.
5 PP.

November 8, 1976

TO: Gary Friedman, Cost Analyst
Box 1033

FROM: John M. Strecker, Assistant University Librarian JMS
Box 1061

RE: Library Data Related to Indirect Costs Rate Calculation for FY 1976

I am enclosing this data as requested. I have further refined the method for determining the estimated Library expenditures for undergraduates and graduate students/faculty which was based on the method worked out by Mr. Kurth in 1971 in consultation with several University administrators. However, after reading the Federal auditor's recent report and hearing from the consultant, Mr. David Neuman, it appears that a new method for allocating the library material costs between teaching/research will have to be devised. Since,I had already developed this data, I'm forwarding it for possible use.

Encl.

WASHINGTON UNIVERSITY LIBRARIES

LIBRARY INDIRECT COSTS STUDY FOR FISCAL YEAR 1976

Part I: Obtaining the Undergraduate Library Materials and Binding Expenditures

For this calculation, statistics from the Library Statistics of Colleges and Universities Fall 1973,[1] published Summer 1976, was used. (See Table 1.) The colleges were selected as representing quality institutions varying in student enrollment from approximately 1,200 to 2,200 students and averaging 1,521. All institutions were indicated in the Federal publication cited as being four year institutions without graduate study offerings. They were cited in Comparative Guide to American Colleges[2] as being either very selective or highly selective in admissions policies. It is the primary function of these colleges to educate students in the liberal arts or in a combination of liberal arts and pre-professional programs. The educational program for undergraduates at these institutions thus requires financial support for libraries similar to that required for undergraduates at Washington University.

The average annual expenditures for this group of colleges for library materials and binding for 1972-73 were as follows:

Books and other materials	$61,330
Periodical subscriptions	24,794
Audio-visual/non-print	1,213
Binding	7,467
Total Average Expenditures for library materials	$94,804

The average enrollment for the ten colleges was 1,521. The average expenditure per student of $62.33 is obtained by dividing the total average expenditures for materials of $94,804 by the average enrollment of 1,521. The next step is to multiply the undergraduate student figure for Washington University for Fall 1975 by the average expenditure per student in the selected colleges (4,221[3] X $62.33). The result is the estimated expenditures for library materials and binding for Washington University undergraduates for Fiscal Year 1976, a figure of $263,094.93, or $263,095.

Part II: Obtaining Library Materials and Binding Expenditures Ratio for FY 1976: Undergraduate to Graduate/Faculty

Library materials and binding expenditures for FY 1976 for the central library and six departmental libraries under central administration were $878,065.87[4] or $878,066. By subtracting the expenditures for undergraduates of $263,094.93 obtained above, we get the graduate/faculty component of $614, 971. This provides a ratio of undergraduate to graduate library expenditures of 1:2.33.

If library materials and binding expenditures for all libraries (including Medicine and Law and other professional schools) are used, then the ratio is 1:3.94. This is obtained as follows:

Books and Continuation Expenditures	$1,208,758.72
Binding Expenditures	90,997.50
	1,299,756.22
Less Undergraduate Expenditures	263,094.93
Graduate/Faculty Expenditures	$1,036,661.29

263,095: 1,036,661 equals 1: 3.94

References

1. Library Statistics of Colleges and Universities Fall 1973. Summary Data (Part A) and Institutional Data (Part B). National Center for Education Statistics. Education Division. U.S. Dept. of Health, Education, and Welfare. (NCES 75-185a and NCES 76-185b).

2. James Cass and Max Birnbaum. Comparative Guide to American Colleges for Students, Parents, and Counselors. 7th ed. Harper and Row, 1975.

3. Figure provided by University Office of Student Records.

4. From Washington University Accounting Services. Summary of Library Expenditures, Current General Funds and Special Funds for the Year Ended June 30, 1976.

TABLE 1.

EXPENDITURES AT SELECTED
FOUR-YEAR COLLEGES IN 1972/73

Colleges	Admissions Ratings	Enrollment	Books Other Lib. Materials	Periodical Subscriptions	A/V and Non-Print Materials	Binding
Davidson (N.C.)	H.S.	1172	$ 86426	$ 25495	$ 0	$15206
Denison (Ohio)	V.S.	2155	65225	26240	7148	5983
Dickinson (Pa.)	H.S.	1713	77466	33763	1416	7265
Albion (Mich.)	V.S.	1789	39874	15999	0	9238
Wheaton (Mass.)	V.S.	1211	63670	37614	492	8803
Lake Forest (Ill.)	V.S.	1047	44826	19957	0	1346
Colby (Maine)	V.S.	1605	77668	24183	828	8670
Lawrence (Wisc.)	H.S.	1323	64533	24533	0	4518
Luther (Iowa)	V.S.	1906	44349	15055	1008	5132
Grinnell (Iowa)	H.S.	1276	49257	25117	1197	8686
TOTAL		15207	$613294	$247936	$12134	$74667
AVERAGE		1521	$ 61330	$ 24794	$ 1213	$ 7467

H.S. = Highly Selective
V.S. = Very Selective

Source: See References 1 and 2.

WASHINGTON UNIVERSITY LIBRARIES

INDIRECT COSTS STUDY
SALARY ALLOCATIONS, FY 1976[1].

Account	TECHNICAL SERVICES Amt/per cent	READER SERVICES Amt/per cent	ADMIN Amt/per cent	TOTAL Amt/per cent
10	$ 57,115 (33)	$ 65,045 (32)	$ 71,550 (35)	$203,710 (100)
11	84,835 (42)	115,675 (58)		200,510 (100)
12	327,601 (51)	250,518 (39)	64,235 (10)	642,354 (100)
Supplementary (12)[2].	26,310 (30)	61,390 (70)		87,700 (100)
Federal Funds Work/Study Program	7,863 (30) $513,724 (44.3)	18,347 (70) $510,975 (44.0)	$135,785 (11.7)	26,210 (100) $1,160,484 (100)

Note: 1. This table represents allocations of total salary costs for the central library and six departmental libraries under central administration among the areas of technical and reader services and administration.

Note: 2. Includes $5,242 cost sharing for Work/Study Program Account.

CORNELL UNIVERSITY LIBRARIES USE SURVEY
(Used in determining Overhead cost on Government Grants)

The Cornell University Libraries Use Survey covers three areas: (1) The Circulation Desk, (2) The Reference Desk and (3) Technical Services. We do not use a door check because this method proved unsatisfactory when it was tried.

The methods used to set-up the survey and instructions for each group are attached.

Also attached is a copy of the break-down submitted to the University for use in working our Indirect Cost Rates. You will note that separate reports are submitted for Endowed and Statutory Colleges.

COST STUDIES
CORNELL UNIV.
11 PP.

CORNELL UNIVERSITY LIBRARY USE SURVEY
(Used in determining Overhead Cost for Government Grants)

Formula for setting up Random Sampling

The Use Survey is a RANDOM SAMPLING of Use at Circulation and Reference desks over a year. The setting up of the random sample for each Library is the most time consuming. It requires determining what hours and days the Circulation and Reference Departments are open throughout the year. This also applies to the Technical Services Department. Numbers are assigned to each hour starting with 0000.

The sample size for each department is determined by the following formula:

$$N = \frac{(1.96)^2 \cdot (P) \cdot (Q)}{d^2}$$

$(1.96)^2 = 3.84$
P = % research
Q = % non-research
$d^2 = .0018$

N ÷ 20 (No. of cards to each Survey) = X

X = No. of samples during the year

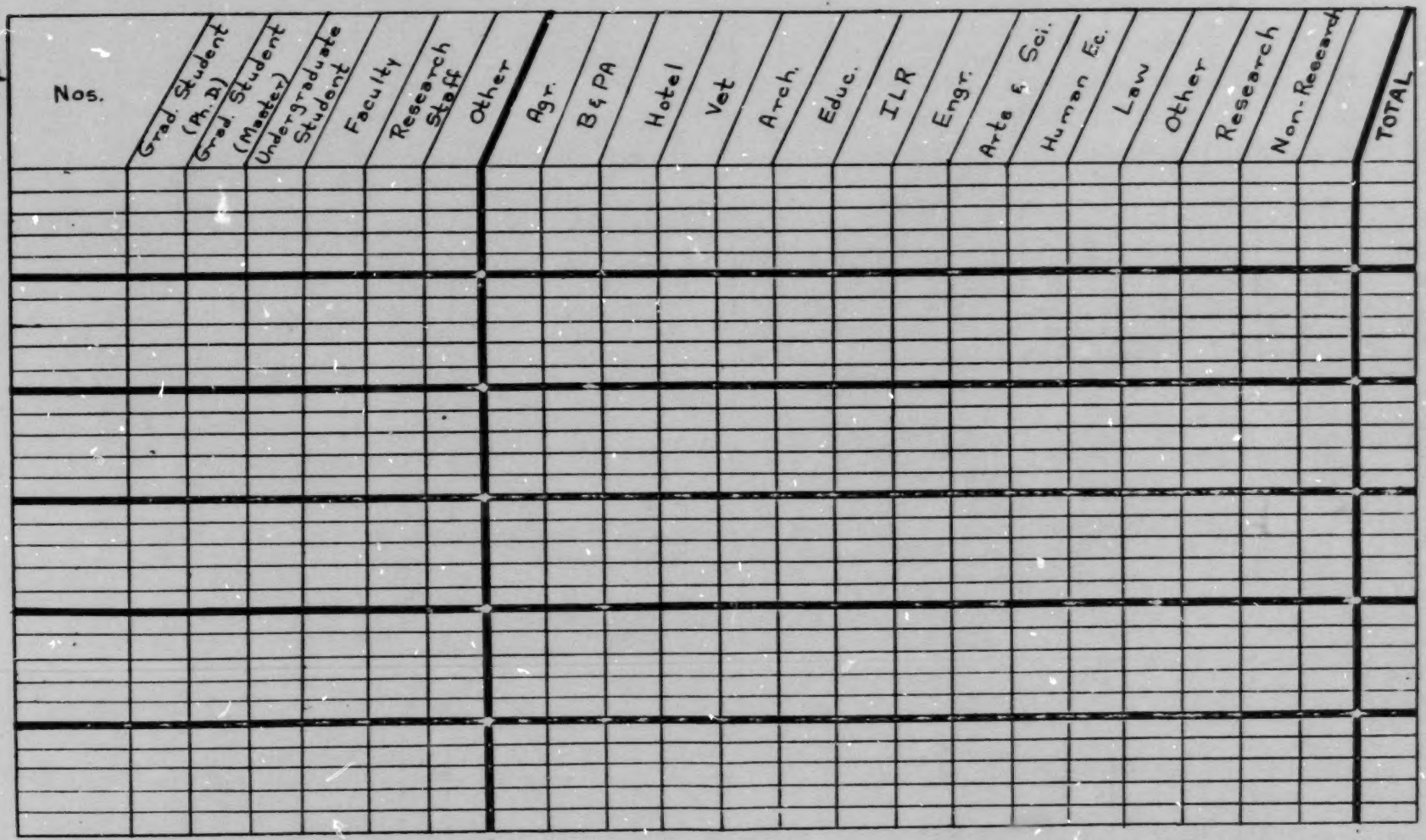
The samples are drawn by using "A Million Random Digits with 100,000 Normal Deviates."

We pick a number between 1 and 400, that is the page on which we start choosing numbers. A number between 1 and 50 is selected, that is the line on which the sampling is started, A number between 1 and 15 is then picked to start the sampling. From the listing of hours open it is determined at what number the survey ended and the number of pages. If the last page was 38 and the last number used was 44, the sampling would be taken between 0000 and 3844. Using these numbers we select at random the number of samples to be taken throughout the year. These numbers are then checked against the sheets giving hours open. If the first number selected was 0523 and the last number 3692, the first two numbers will represent the page and the next two numbers will be the number on the page, i.e. the survey will start on Sept. 3 at 1 p.m. When duplicate numbers come up we take the next number.

After the date and hour of survey is determined each Library and department receives the cards (which are numberd) to cover the alloted number of times the sampling is taken.

DAY	HOUR	#	DAY	HOUR	#	DAY	HOUR	#	DAY	HOUR	#
		00			25			50			75
		01			26			51			76
		02			27			52			77
		03			28			53			78
		04			29			54			79
		05			30			55			80
		06			31			56			81
		7			32			57			82
		8			33			58			83
		9			34			59			84
		10			35			60			85
		11			36			61			86
		12			37			62			87
		13			38			63			88
		14			39			64			89
		15			40			65			90
		16			41			66			91
		17			42			67			92
		18			43			68			93
		19			44			69			94
		20			45			70			95
		21			46			71			96
		22			47			72			97
		23			48			73			98
		24			49			74			99

CORNELL UNIVERSITY - LIBRARIES - LIBRARY USE SURVEY 1972-73



BEST COPY AVAILABLE

CORNELL UNIVERSITY LIBRARIES

LIBRARY USE SURVEY

TECHNICAL SERVICES SAMPLING

Procedure for the Collection of Data

The attached sampling schedule gives the times at which you are asked to gather data which will be used by the University in computing overhead rates for Federal research grants and contracts.

Enough margin has been provided in the design of the survey to allow for errors in sampling, minor variations in schedules, snow emergency days, or short building take-overs. If for any reason, you cannot take a sampling at its assigned time, please do not attempt to substitute some other time for it. In case this happens, just return the unused cards to Budget and accounting office with a note explaining what happened.

You have been provided with packs of prenumbered cards (see sample below).

OLIN

CORNELL UNIVERSITY LIBRARIES
LIBRARY USE SURVEY
TECHNICAL SERVICES

Date_____ No._____

Author_____

Title_____

Edition (if other than 1st)_____

Does this title fit in the category "Research"?
Yes____ No____

Name_____

Each card asks you to record the date on which titles are examined, as well as the following bibliographic information for each title: author, title, edition (if other than the 1st). It also asks for the person doing the examination to sign his or her name. Please make sure that each card is filled out completely, as it will be impossible to use cards which lack any of this information.

When your schedule calls for a sampling to be made, please select the first 20 titles from your receiving table, or mail bags, or whatever place your new acquisitions are gathered, before they are sent along to be processed. (Olin, see special instructions on this.) Please note that the schedule which was given to you indicates time at which samplings are to be started. If your schedule says "July 5, a.m." this means that starting in the morning of July 5, you are to select the first 20 titles from your receiving table. (Olin, see special instructions.) If you do not get 20 titles in the morning, continue however long it takes to reach 20, then stop until the following scheduled sampling time. If that time comes before you have filled out 20 cards, stop the first sampling and start the new one, no matter how few cards were filled out.

If your schedule calls for a sample to be taken at the end of the day, or the week, you do not get 20 cards filled out by the time the day or week is over, continue the sampling on the next day, until all your cards allotted for that sample are filled out, or until you are required to take a new sampling.

The card asks you to answer one question about each title: whether or not it was purchased for research. The attached criteria are to be used in answering that question. Please note that they are mutually exclusive. If a title fits under (1), that's it; it does not matter if it also fits under (3) or (4), or both. If it fits under (2), it does not matter if it also fits under (4) or (5). The sixth criterion should be used only in cases where the first five do not apply. If the person doing the analysis is not sure of how to answer that particular question, he or she should check with someone else who might know. There are few enough titles involved over a one-year period to allow this. (Olin, see special instructions.)

Please return all cards to Budget & Accounting Office as soon as they are filled in as possible. Please be sure to communicate to him any changes in your procedures which would make the continuation of the survey difficult, or any problems which you may have. Your comments will help us in preparing next year's survey.

BEST COPY AVAILABLE

Special Instructions for Olin

You have been given a schedule which differs from the others to account for the variety or procedures in your department which come into account. Beginning at the times indicated, please ask the clerk at the receiving table to fill out and insert a card for the first 20 titles which she gets, including the last two lines. Next, ask her to take the books to Susan Gauck who will complete the process.

In case of books ordered for branch libraries for which she cannot answer the question on the card, Susan Gauck is to send those cards to the branch librarian concerned who will complete them and return them to Budget & Accounting Office.

Please note that books ordered for the I&LR Library are to be excluded from your share of the survey, since these will be sampled elsewhere.

Blanket order titles are to be held in their regular place until the librarian concerned has had a chance to look them over. He or she then can complete the cards, have them returned to Budget & Accounting Office.

All monographic series titles, except those ordered for Uris are to be classified as "Research".

Criteria to be Used in Classifying Books as "Research" or "Non-Research"

1. All books purchased for the Uris Library will be classified as "non-research".

2. All books purchased for a reserve collection will be classified as "non-research".

3. All books in foreign languages will be classified as "research".

4. Publications of specialized research agencies will be classified as "research".

5. Publications of a documentary nature (reports of union conventions, proceedings, government publications) will be classified as "research".

6. All publications not classifiable within the above categories will be handled in the following way:

BEST COPY AVAILABLE

The individual examining each publication will ask himself the following question--"If the University had no instructional program dealing with the subject matter of this book, would it still be purchased?" If the answer is yes, the publication will be classified as "research". If not, it will be classified as "non-research".

/lh

CORNELL UNIVERSITY LIBRARIES

LIBRARY USE SURVEY

Procedures for the Collection of Data

The following instructions apply to the collection of data in both circulation and reference departments. In order to satisfy the requirements of Federal auditors, each function must be sampled separately. Please do not mix the sampling schedules. They are not interchangeable.

Enough margin has been provided in the design of the survey to allow for errors in sampling, minor variations in schedules, snow emergency days, or short building take-overs. If for any reason, you cannot take a sampling at its assigned time, please do not attempt to substitute some other time for it. In case this happens, just return the unused cards to Budget & Accounting Office with a note explaining what happened.

You have been provided with sampling schedules for the circulation and/or reference functions in your library. Each must be handled separately from the other, even at times when the schedules call for both functions to be sampled simultaneously.

You have also been provided with packs of prenumbered cards (see the samples below). These cards ask the same information of a patron, whether he is charging out a book or asking a reference question, namely his status, college affiliation at Cornell, and name. Please make sure that each user fills in his name as it will be impossible to use cards without this information.

FAL

CORNELL UNIVERSITY LIBRARIES
LIBRARY USE SURVEY - CIRCULATION

Date_____ No. 478

____Cornell ____Non-Cornell

If Cornell, check status:	Circle school or college:		
___Graduate (PhD)	Agr.	Arch.	Arts&Sci.
___Graduate (Master)	B&PA	Educ.	HumanEc.
___Undergraduate	Hotel	ILR	Law
___Faculty	Vet.	Engr.	
___Research staff	Other_____		
___Other_____			

Name_____
(Please print)

CORNELL UNIVERSITY LIBRARIES Vet.
LIBRARY USE SURVEY - REFERENCE

Date_____ No._____
___Cornell ___Non-Cornell

If Cornell, check status:	Circle school or college:		
___Graduate (PhD)	Agr.	Arch.	Arts&Sci.
___Graduate (Master)	B&PA	Educ.	HumanEc.
___Undergraduate	Hotel	ILR	Law
___Faculty	Vet.	Engr.	
___Research staff	Other_____		
___Other_____			

Name_____
(Please print)

When your schedule calls for a sampling to be made, please ask the first twenty patrons who charge out a book, in case of the circulation study, or who ask a reference question, in case of the reference study, to fill out a card. In some cases it will take just a few minutes to get the twenty cards filled out and, in others, a few hours or even days. If your schedule calls for a sampling to be made, for example, at 4 p. m. on September 15, 1975, and again at 6 p. m. on the same day, and if you do not get twenty cards filled out during that time, stop the first sampling at 6 p. m. and start the new one, no matter how few cards were filled out between 4 and 6 p. m.

If your schedule calls for a sample to be taken at the end of the day, or the week, and you do not get twenty cards filled out by the time the day or week is over, continue the sampling on the next day, until all your cards allotted for that sample are filled out, or until you are required to take a new sampling.

If your library is one in which several departments answer reference questions, and keep statistical records of the questions asked, allocate your cards between them, or keep the cards in a central location and be sure to inform all staff members concerned of the times at which a survey of concern to them is being made.

In case of the circulation study, please ask any user, except borrowers of books from the reserve collection, who charges out a book to fill out a card. This sampling applies only to general circulation.

Finally, return all cards to Budget & Accounting Office as soon after they are filled in as possible. Please be sure also to communicate to ~~him~~ any important scheduling changes which your library may make. The present schedules are estimates based on previous practice and any extensive changes in them will necessitate a modification of the relevant sampling schedules.

CB/kd
6/15/75

COST STUDIES
PURDUE UNIV.
25 PP.

LIBRARIES AND AUDIO-VISUAL CENTER

COST ALLOCATION STUDY

RDU 76-02

Submitted to the Office of the Provost
Purdue University

By

Miriam A. Drake

Research Development Unit
Libraries and Audio-Visual Center
Purdue University
West Lafayette, IN 47907

May 1976

BEST COPY AVAILABLE

BACKGROUND

The Libraries and Audio-Visual Center cost allocation study was undertaken primarily for the purpose of supplying input data for the Program Cost Study being conducted by Purdue University's Office of Analytical Studies (OAS). Prior to the initiation of the present study, two previous cost studies were examined to determine whether they could be used to fulfill the data needs of the Program Cost Study. The Quatman Study, which was completed in 1961, was undertaken " . . . to determine the average costs of providing library services and facilities to members of the university community engaged in research supported by organizations outside the university."(1) The results of the study provided the basis and methodology to determine the indirect library costs which could be charged to outside research contracts. Quatman's results were found to be inappropriate for the following reasons: 1) costs were not attributed to teaching departments; 2) student and faculty populations were tallied on different bases; 3) basic data was old; and 4) there was no rational weighting system use to determine research usage of library facilities.

The 1971 Library Cost Study was the second study examined.(2) It was considered unsuitable to OAS's need because its focus was organizational rather than functional. In addition, the study did not attribute costs to user groups.

The study presented in this report was funded by the Office of the Provost and the Libraries and Audio-Visual Center.

Objectives

The objectives of the study were to:

1) Ascertain the costs of providing library and audio-visual services and materials to the Purdue West Lafayette campus for fiscal year 1975;
2) Allocate costs by user groups (e.g., undergraduate, faculty, etc.) and by academic department;
3) Allocate costs by library function (e.g., processing, client services, etc.); and
4) Allocate costs by end use (e.g., instruction, research, or public service).

The first and second objectives received the highest priority and closest attention. Objectives 3 and 4 have been completed to the extent that time and funds allowed.

In determining the costs of Library and Audio-Visual Center operations, the goal has been to obtain reasonably accurate data. It was not possible to determine all costs precisely; however, it is hoped that work in this area will continue and that refinements will be made in the data and collection methods.

Advisory Committee

Overall guidance for the study was provided by an Advisory Committee composed of the following persons: Frank Eikenberry, Head, Office of Analytical Studies, Ferdinand Leimkuhler, Professor of Industrial Engineering; Charles Lawrence, Professor of Cost Accounting; William

Corys, Head, Library Systems Development; Keith Dowden, Assistant Director, Reader Services; and Michael K. Buckland, Assistant Director, Technical Services. The committee met periodically with the study team to discuss methodological problems, review progress, and make suggestions. Each member of the Committee contributed ideas from different points of view. The Research Development Unit is grateful to Committee members for the time and effort they have contributed to this study.

BEST COPY AVAILABLE

METHODOLOGY

Cost accounting was the basic technique used to determine and analyze costs in this study. Standard cost accounting procedures, which were designed for profit-making institutions, were modified to accommodate accounting procedures used at Purdue. The works of Leimkuhler and Cooper[3], Shillinglaw[4], Gross[5], and Anthony, Dearden and Vancil[6], were used as general reference works in the field.

The framework for measuring costs in the Libraries and Audio-Visual Center was based on functional units rather than organizational structure. The system was divided into responsibility centers and cost centers. A responsibility center is defined as a functional unit consisting of a variety of activities with a broad objective. The Libraries and Audio-Visual Center consists of two responsibility centers: materials acquisitions and processing, and client services. A cost center is defined as a unit which is relatively homogeneous but is directed toward defined activity. Figure 1 illustrates the relationship of responsibility and cost centers. Client related activities, such as reference, circulation, etc., take place in defined units which are the school and departmental libraries and the audio-visual service centers. These units are referred to as service locations in this study. Figure 2 illustrates the relationship of functional activities and the service locations.

Data collection difficulties precluded analysis of costs by desired cost center. For the purposes of this study, the Libraries and Audio-Visual Center were considered separate units. Selection, purchase, and

FIGURE 1

LIBRARIES AND AUDIO-VISUAL CENTER

RESPONSIBILITY AND COST CENTERS

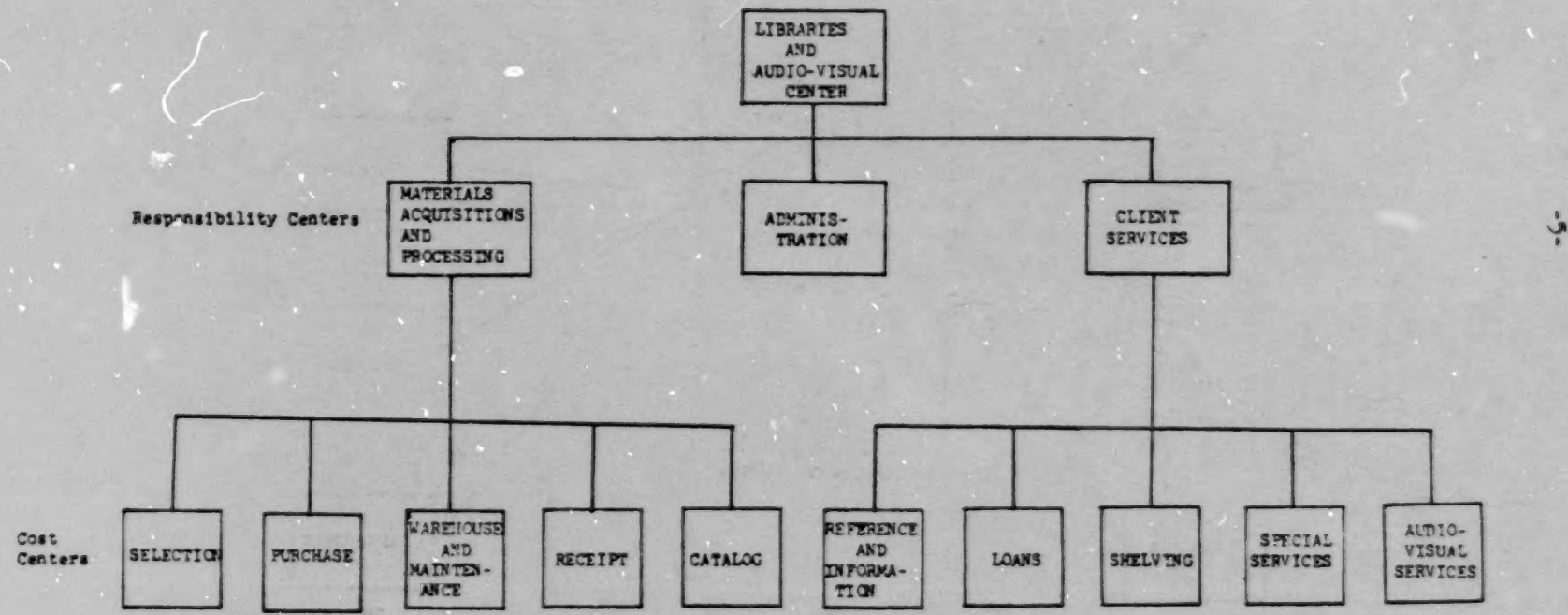
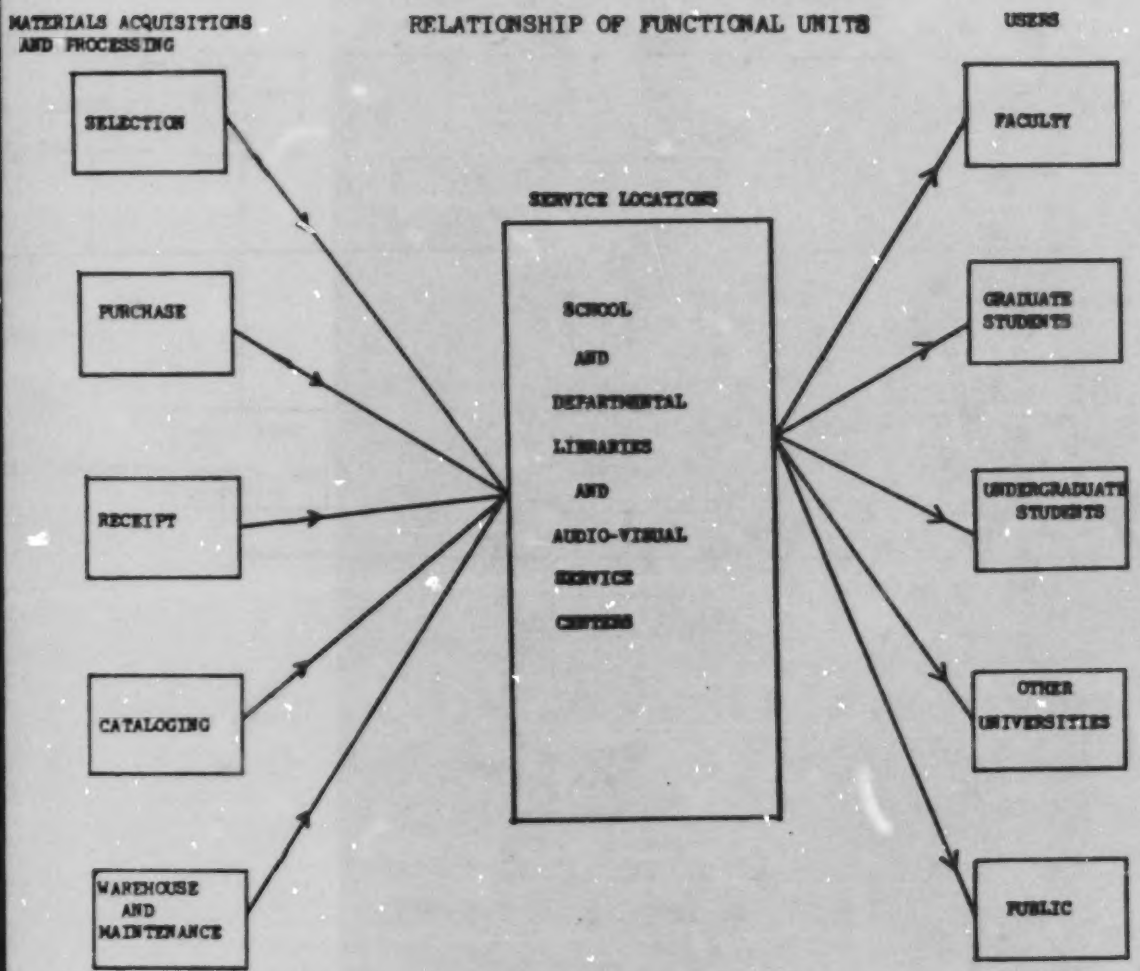


FIGURE ?

LIBRARIES AND AUDIO-VISUAL CENTER

RELATIONSHIP OF FUNCTIONAL UNITS



receipt of library materials were grouped into a single cost center for acquisitions with a second center for cataloging and related activities. Identification of separate warehouse and maintenance costs was not possible. Library client services and audio-visual services could not be broken down into cost centers. The illustrations (Figures 1 and 2) are included in this report to provide a model for future studies.

In measuring costs for each functional unit, both direct and indirect costs were determined. Direct costs, that is those costs which are incurred as part of a specific activity include; salaries and wages, fringe benefits, equipment, materials, assignable supplies and expense, space, and utilities. Indirect costs, common to two or more cost centers, include; administration, fiscal office, personnel office, systems development unit, research development unit, mail delivery, xerox, telephone, travel, unassignable supplies and expense, and miscellaneous. Indirect costs have been allocated on the basis of professional salaries and wages for each functional unit.

Sources of Data

Salaries, wages, fringe benefits, and other expenses were based on budgeted data as actual expense data is not readily available. Equipment, materials, and assignable supplies and expense were based on actual expenditures. Assignable supplies and expense includes; order forms used by the Acquisitions Department, catalog card stock, and keysort circulation forms used by the Krannert and General Libraries. Equipment and supplies given to the libraries by the teaching departments

were not included in this study. The cost for space, utilities, and maintenance is based on estimates supplied by Physical Plant. The floor space assigned to Libraries and Audio-Visual Center activities was determined through computer printouts provided by Schedules and Space.

Staff Activities

Libraries' staff working in service locations divide their time among a number of activities. In addition to the provision of direct client services, school and departmental librarians perform duties which are functionally related to materials acquisitions, such as book and serial selection, pre-order searching, order, and processing to make material readily available for users. In order to determine the proportion of salaries and wages that should be allocated to the various activities, professional staff were asked to estimate the time they and their support staff spend on specified activities. These proportions were applied to salaries, wages, and fringe benefits to determing the direct labor cost associated with the activities.

Library representatives and departmental library committee members, who are members of the teaching faculty, spend varying amounts of time on behalf of the library. The cost of their time was not included in this study because data concerning time spent were not readily available. Data contained in the Activity and Assignment Report issued by OAS were examined, but were found to be unsuitable because reporting of time spent on library committees by faculty members was incomplete, inconsistent, or nor uniquely identified. For example, some departments

reported assignment of library committee members, other reported only the library representatives' time, while others reported no library activity. Time spent by library representatives and committee members represent a significant cost to the University and a substantial portion of materials selection cost. University administration costs also have been excluded from this study because data were not readily available.

Libraries Allocation Techniques

The primary objectives of this study were to determine the cost of providing library and audio-visual materials and services and to allocate these costs to user groups. There are three basic approaches to allocation:

1) intended use, which is based on the idea that materials and services are provided with the intent that they be used by specific groups;
2) actual use, which is based on the measured usage of materials and services by defined user groups; and
3) the indirect cost approach, which views library and audio-visual services as an indirect support function with costs to be allocated according to faculty salaries and wages.

The National Center for Higher Education Management Systems recommends that library costs be allocated to programs according to compensation " . . . adjusted by a faculty activity analysis," and audio-visual services be allocated according to actual usage.(7)

In this study, two allocations methods were applied to the cost data and compared. The first approach is a combination of actual use and intended use and is based on the idea that materials are purchased at the request of specific departments which intend to use them. Acquisitions and processing costs can be allocated on this intended use basis; however, it is not possible to allocate client services on this basis because they are offered to all groups. Client services, therefore, are allocated on an actual use basis.

The attribution of client service costs can be approached in two ways. The first method sums costs for all service locations and apportions the cost on the basis of actual usage of the whole system. The second method takes into account the variances in cost and usage among the different service locations. The cost of service provision in smaller libraries with one or two staff will not be the same as the operating cost of larger service locations with more staff. In addition, usage of each library location is not consistent among the teaching departments. Thus, it is necessary to divide the cost of service at each location according to the usage of that location and sum the usage cost for each department.

The second overall allocation method is based on actual usage of the total system. The underlying theory is that library services are offered to the total community and the groups which use the library should bear the burden in proportion to their actual usage of materials.

Usage Data

The allocation of costs according to actual usage necessitates having accurate data concerning library and audio-visual users. The most convenient library statistic to collect is recorded circulation. Librarians have raised two main objections to the use of this statistic as an indicator of usage:

1) in-house use and reserve book use are not taken into account; and

2) other services, such as reference are not segregated.

A study by McGrath at Louisiana State shows high positive correlation between the subjects of books used inside the library and books which are circulated outside. McGrath concluded " . . . that circulation totals, when grouped into self delineating spans, can be reliable indicators of the subjects being used within as well as out of the library."(8)

Densmore and Bourne(9) in their cost study at Stanford indicated that over-the-counter circulation data appear to provide a good estimate of the use of library services.

Purdue does not collect data on the use of library services by user group; therefore, a special study of recorded circulation was undertaken to provide this data. A copy of the Circulation Study is appended to this report.

A similar study of Audio-Visual Center usage was undertaken for the period February 1 through April 30, 1975. The results of the study are presented in Appendix Tables A-1, A-2, and A-3 and indicate equipment and material checked out of the center and substations and material used within the center.

Research Vs. Instructional Uses

A lower priority objective of this study was to allocate costs by end use, i.e., instruction, research, and public service. The last category, public service, is easiest to estimate because the circulation study includes usage by persons outside Purdue through direct charges and interlibrary loans.

The Cost Study Advisory Committee discussed the problem of research and instructional uses of library and audio-visual services at length. There are no readily available or widely accepted methods of allocating library costs according to end use. The Advisory Committee considered and rejected three methods:

1) assign research usage according to time spent as indicated on the Activity and Assignment Report;
2) allocate research usage among graduate students and faculty according to the Payroll Report; and
3) survey library users.

The Activity and Assignment Report and Payroll Report methods were rejected because neither report accurately reflects the amount of research being done which requires use of the Libraries and Audio-Visual Center. A survey of library users was considered unsatisfactory because of the time and expense involved. In addition, the committee concluded that the results of such a survey would not be sufficiently accurate.

The allocation of costs according to end use is important for the following reasons:

1) the University needs to have reasonably accurate data in order to determine costs for its instructional programs;
2) the Office of Contract Administration, which is responsible for the Indirect Cost Study, needs data to determine the portion of cost which should be attributed to sponsored research and paid by the contracting agency; and
3) data on how library and audio-visual materials and services are used provide planning information for the Libraries and Audio-Visual Center Administration.

Time and funds available for this study precluded an in-depth examination of the issues involved in various end uses of the Libraries and Audio-Visual Center; therefore, it is recommended that these issues be studied further (see page 21).

Audio-Visual Costs

The Audio-Visual Center engages in a variety of activities in connection with the provision of services and material to is clientele. In addition to the selection, acquisition, processing, and loan of material, the center provides equipment which must be inspected and maintained and trained personnel who set up equipment configurations as well as operate the equipment.

Audio-Visual Center personnel were not asked to supply data regarding the distribution of hours spent performing their various jobs; therefore, it was not possible to gather cost data for specific functions. The total operating cost of the Audio-Visual Center was allocated to academic departments on the basis of usage data.

The direct and indirect cost items for the Audio-Visual Center are similar to those for the Libraries with the addition of depreciation for major equipment items, such as projectors, video tape playback units, tape cassette recorders, etc. Depreciation represents a major cost for the center because the equipment is essential to operations and has a limited life. Depreciation estimates were developed in a study undertaken by the Research Development Unit in 1975.(10) These estimates cover only major pieces of equipment and do not include films and other material which also have limited useful lives.

COST FINDINGS

The estimated cost of providing library and audio-visual services to the West Lafayette campus for 1974-75 was $3.8 million. This sum includes both budgeted and actual expenditures. As indicated earlier, this figure does not include the cost of teaching faculty time spent on behalf of the Libraries, the cost of equipment or supplies provided by the teaching departments, or the cost of University Administration. A summary of major items included in the total cost is presented in Tables 1 and 2.

Details of libraries operating costs for fiscal year 1975 are presented in Appendix B. The cost of materials for the libraries was $1,032,880 while the cost of selecting, ordering, and processing those materials was $640,538. Processing costs represent 53% of the total cost of materials and processing books. Serials processing costs are substantially lower at 26% of the total serials cost. Percentage distributions for book and serials costs are showing in Figures 3 and 4. Direct services to users through school and departmental libraries cost $1,660,854 in fiscal year 1975.

Cost Allocation

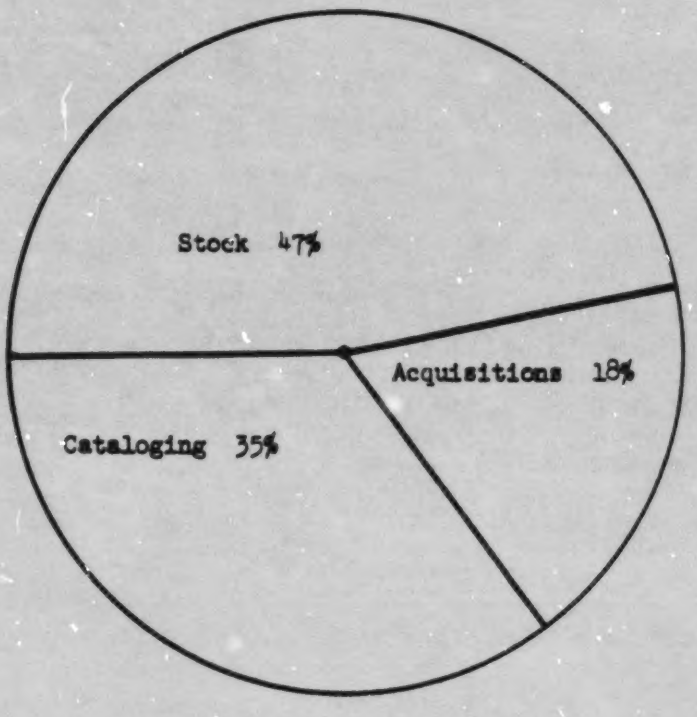
Allocation of costs to academic departments and classes of users is shown in Table 3. Approximately one-third of the cost of library and audio-visual services has been attributed to departments in the School of Humanities, Social Sciences, and Education. The Departments of Education and English, being the heaviest users of the system, have

Figure 3

Libraries/Audio-Visual Center

Percent Distribution of Books and Serials Cost by Function

BOOKS



SERIALS

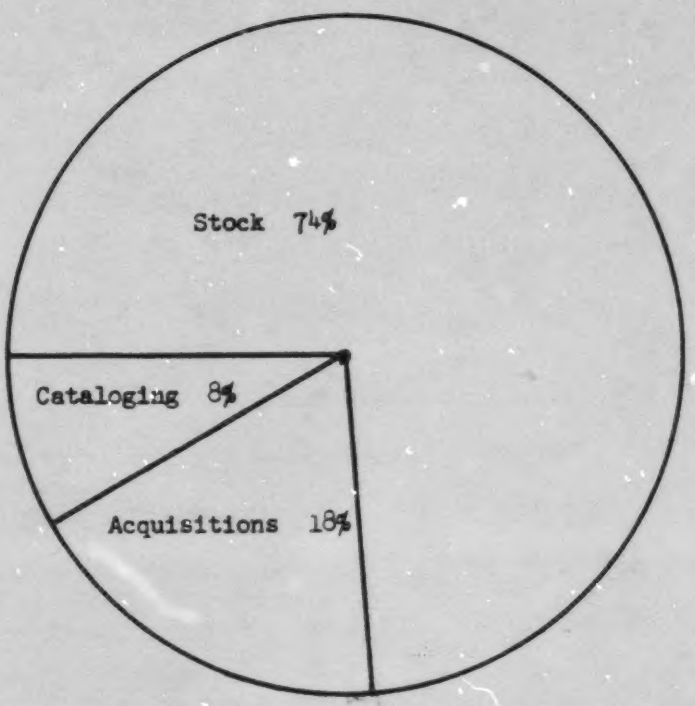
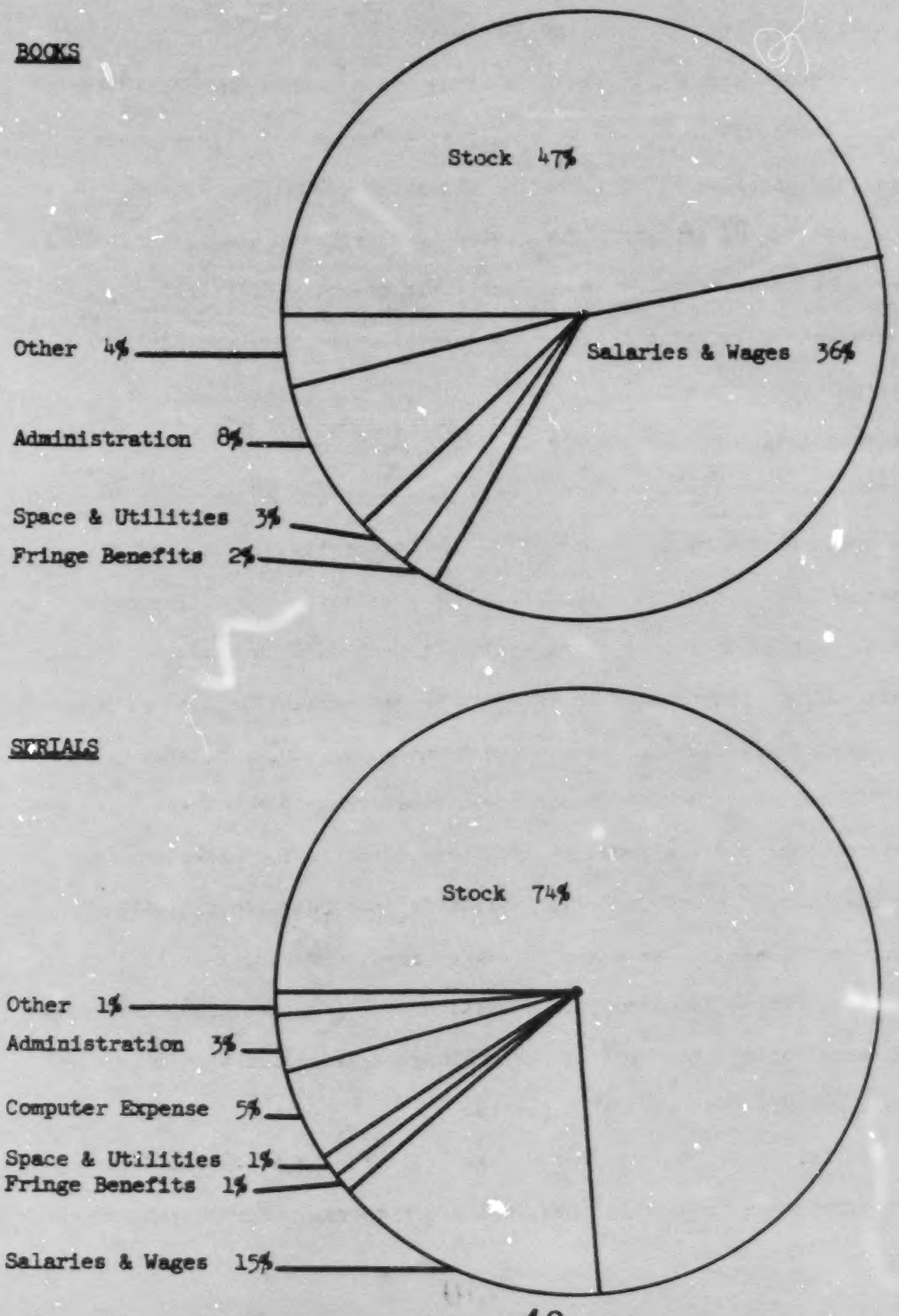


Figure 4

Libraries/Audio-Visual Center

Percent Distribution of Book and Serials Costs by Budget Component



been allocated the greatest proportion of the cost. Interlibrary loan and public service accounted for 7% of the cost.

The Instructional Program Cost Study relates instructional costs to population according to F.T.E. faculty and students. Table 4 shows a summary, by department, of Libraries and Audio-Visual Center costs per F.T.E. faculty and student. The highest per capita Libraries costs are incurred by graduate students in foreign languages and literature, history, and political science. Per capita costs range from $.12 for undergraduates in statistics to $1284.58 for graduate students in foreign languages and literature.

Because the allocation of library and audio-visual costs influences other cost studies being conducted by the University, it is useful to compare allocations which result from the application of different methods. Table 5 presents a cost allocation comparison based on usage, faculty F.T.E., and faculty salaries. The differences between allocations based on faculty F.T.E. and those based on faculty salaries range from 28% for the School of Technology to less than 1% for the School of Veterinary Medicine. A comparison of cost distribution based on usage with distribution based on faculty salaries produces significantly greater differences. For example, usage based cost for the School of Humanities, Social Sciences, and Education is 40% higher than cost based on salaries while the School of Agriculture's allocation is 93% greater if based on salaries rather than usage.

Cost allocation according to usage reflects the actual utilization of resources more accurately than indirect methods. Library and audio-

visual services are provided to the entire University community; however, the utilization of these services is not distributed equally among teaching departments and bears no direct relationship to the number of faculty and students in any department. In order for the University to have an accurate view of the resources utilized by academic departments, library and audio-visual services costs should be allocated on the basis of usage.

RECOMMENDATIONS

Depreciation of Audio-Visual Equipment and Materials

Audio-visual equipment and materials have limited useful lives due to wear and tear and obsolescence. The current study included an estimate of depreciation for major equipment items, but excluded costs associated with minor equipment, materials (e.g., films), and equipment which has been fully depreciated. The quality of service provided by the center is dependent upon equipment which operates efficiently and reliably and materials which are in good working order. The Center's program of inspection, maintenance, and repair has prolonged the useful life of equipment and materials resulting in cost savings for the University with small loss in the quality of service; however, as equipment ages through use, the cost of repair increases and becomes uneconomic. The standards of audio-visual service on the West Lafayette campus will suffer if equipment and materials are not replaced. It is recommended that an inventory be taken of films in the film library. The listing should include identification number, purchase date, replacement cost, number of uses, projected replacement date, and annual depreciation write-off. In addition, it is recommended that the University provide reserve funds for the periodic replacement of worn out equipment and films.

Depreciation of Library Materials

Most library materials lose value over time due to wear and tear from usage or obsolescence of content. Classic works and many out-of-

print works, however, appreciate in value over time. There have been many studies in the field of bibliometrics which provide a basis for determining loss of value due to obsolescence. As the value of physical space in libraries rises, it becomes increasingly important to weed obsolete or unused materials from library collections. In addition, library materials represent capital assets and should be adjusted in value over time. It is recommended that a study be undertaken to determine obsolescence patterns for major library collections, and to identify classic works, or out-of-print materials which are increasing in value. Procedures for weeding library collections should be developed. Also, storage facilities should be investigated.

Research Uses of the Libraries

As stated earlier, the study team was unable to produce a satisfactory methodology for the allocation of costs to research and instructional uses of the libraries. The primary difficulties with existing methods are the assumptions that: 1) library usage is in direct proportion to the time spent on research and instructional activities by faculty and graduate students; and 2) libraries services utilized for research by faculty and graduate students are equal to those utilized in instructional activities. Cost estimates based on the two assumptions could produce misleading results and overstate or understate the cost of providing library services to research and instructional programs.

The financial management section of the U. S. Department of Health, Education, and Welfare in its proposed revisions to Federal Management Circular 73-8 has stated that library resources and services are provided

primarily for the use of students and faculty with ". . . little or no services provided to Federally sponsored agreements . . .". Because library materials may be purchased with research funds, HEW is recommending that library services no longer be treated as an indirect cost. Their alternative is to treat library services as an "other institutional activity" or a special service facility. The cost of special service facilities, such as electronic computers, animal centers, and audio-visual centers are allowable provided that the amount charged, as a direct cost, to the project is based on actual usage of the services.(11) The implication of the proposed revision is that library costs incurred in the provision of service to sponsored research can be recovered; however, the cost must be in proportion to the actual usage of services.

At the present time, the Libraries and Audio-Visual Center is not prepared to provide data for the implementation of direct costing of library and audio-visual services. It is recommended that a pilot study be undertaken in cooperation with the Schools of Engineering to determine the actual usage of library and audio-visual facilities for research purposes by faculty and graduate students in Engineering and to develop a methodology for the direct costing of these services.

TABLE 1

LIBRARIES AND AUDIO-VISUAL CENTER

COST SUMMARY

1974-75

ITEM	LIBRARIES			AUDIO-VISUAL	TOTAL[3]
	Processing	User Services	Total		
Salaries & Wages	$ 422878	$ 616963	$1039841	$ 249395	$1289236
Fringe Benefits	27197	48390	75587	16140	91727
Space & Utilities	30639	671593	702232	55830	758062
Major Equipment	1169	1058	2227	36932	39159
Minor Equipment	----	----	----	6773	6773
Repair & Maintenance	----	----	----	8671	8671
Depreciation	----	----	----	10140[1]	10140
Computer Expense	49752	-0-	49752	8697	58449
Supplies & Expense	3887	6162	10049	19165	29214
Subtotal	$ 535522	1344166	$1879688	$ 411743	$2291431
Materials Stock	----	----	1032880	15232	1048112
Administration	91182	240151	331333	43903	375236
Indirect	29180	76546	105726	----[2]	105726
TOTAL	$ 655884	$1660863	$3349627	$ 470878	$3820505

(1) See discussion p. 14.

(2) Indirect expenses are allocated to libraries only as items covered in this category are included in Audio-Visual Center supplies and expense.

(3) This total includes both budgeted and actual expenditures.

TABLE 2

LIBRARIES AND AUDIO-VISUAL CENTER

INDIRECT COSTS

1974-75

Administration	
Administrative Offices	$ 157263
Fiscal Office	62964
Personnel Office	22005
Systems Development	42416
Research Development	48406
Library Delivery	42182
Total	$ 375236
Other Costs Not Allocated Directly	
Automotive	$ 637
Printing & Office Supplies	23669
Travel	8147
Telephone	13580
Postage	12000
Consulting Fees	5139
Computer Services	9910
Rental Contracts	12457
Minor Equipment	315
Insurance	277
Repair and Maintenance	4019
Capital Equipment	15576
Total	$ 105726

ALLOCATION OF THE LIBRARY COST POOL AT STANFORD UNIVERSITY*

INTRODUCTION

OMB Circular A-21, now known as FMC 73-8, in paragraph F.4 describes the library cost pool and allocation process. Paragraph F.4(b) allows for special studies to be made if the results of the study produce a more equitable allocation between the various cost objectives. It also states that the studies must be done in accordance with Section E.2 of A-21. Such selective distribution bases should be made through use of reasonable methods which give adequate recognition to the utilization of the library attributable to faculty, research personnel, students and others. Such studies should be reviewed periodically and updated for the latest information. At Stanford our current approach started with a comprehensive study of the library system by G. Densmore and C. Bourne, then with Stanford Research Institute. The University has updated the study several times, the latest of which was in December, 1974.

Library cost allocation is an interesting area because of the apparent inconsistencies in recovery level among many research institutions. Several years ago we took a sampling of institutions to determine the range of allocation of total library cost to research. The results were startling in that the range of allocation varied from 3% to 23% of the library costs being allocated to research. With a range this broad, we encourage all institutions to take a look at this cost category to see that they are maximizing cost recovery.

STANFORD'S APPROACH IN OVERVIEW

The underlying logic behind the Library Study is first to develop the costs for library services and materials, and second to allocate said costs to the user groups which are benefited by the cost incurrence or which caused the costs to be incurred. In order to gather the library costs into proper cost groupings for allocation, logical associations had to be made between the incurrence of the cost and the purpose of the cost. The associations are best addressed by grouping the costs into (1) central library administrative costs, (2) costs of collection processing and maintenance of the collection (CPM), and (3) cost of serving the public (PS). The central administrative costs of the library are then allocated to the Collection Processing and Maintenance cost and the Public Service cost to obtain the full cost of each.

*Prepared for the Association of Research Libraries

After the two main cost groupings have been developed, they are allocated to the user groups on the basis of the purpose for which the costs were incurred. The purpose for obtaining and maintaining the collection is for the use of Stanford faculty, students and staff for their instruction and research activities. The purpose of the public service cost incurrence is to serve the users of the library system that check out, return and reserve materials and inquire about general library services.

To refine further the allocation of the costs for processing and maintenance of the collection, the concept of primary user group has been developed. The logic of this concept relates the cost of the Engineering collection to engineers, the cost of the Physics collection to physicists, the Medical School collection to activities in the School of Medicine, Art to artists, History to historians, etc. The focus of this logic is to relate the cost with the cause of its incurrence.

Conversely, the public service cost is generated through demands caused by the public entering the library and requesting service. The logical allocation of the public service cost is to relate the cost incurred to those being served. A circulation survey of the public service utilization was taken to ascertain who uses these services in order that public service costs could be so allocated.

The study results in costs allocated to four user groups (undergraduate students, graduate students, faculty/staff, and non-Stanford users). The December, 1974 study produced the following distribution of costs by user group:

Undergraduates	17.15%
Graduates	48.34
Faculty/staff	31.76
Non-Stanford	2.75
	100.00%

In applying the results of the periodic study, library costs are adjusted for federal funding, rare books, equipment purchases, and other unallowable costs or applicable credits. The costs by user group are allocated among University functions (instruction, research, etc.) in the overhead allocation process. Undergraduate and graduate student costs are allocated on the basis of student credit hours and student employment hours.

The faculty/staff costs are allocated on the basis of salaries and wages. The non-Stanford user costs are, of course, absorbed by the University with no allocation to sponsored activities.

STANFORD'S APPROACH IN DETAIL

1. Determining the Cost Pool

The total direct costs for each library are developed from the University's expenditure detail for the year. Cost data were assigned to particular library facilities, of which there are 30 segregated in this study, according to the account description. Depreciation and Use, Operation and Maintenance, and University General and Administrative Expense are cross-allocated to the library cost pool as part of the overhead allocation process. The cost elements are described below and shown in Exhibit 1.

a. Salaries

Salary costs were available as direct charges to specific library facilities. In cases where salary costs were supporting a particular group of facilities, the costs were allocated among the facilities on the basis of the direct salaries of the benefiting facilities.

b. Fringe Benefit and Supplies and Expense

These charges were generally identified to particular facilities. All charges not so identified were distributed as in (a) above.

c. Books and Periodicals

Books and periodical costs were determined directly for each facility.

d. Depreciation and Use; Operation and Maintenance

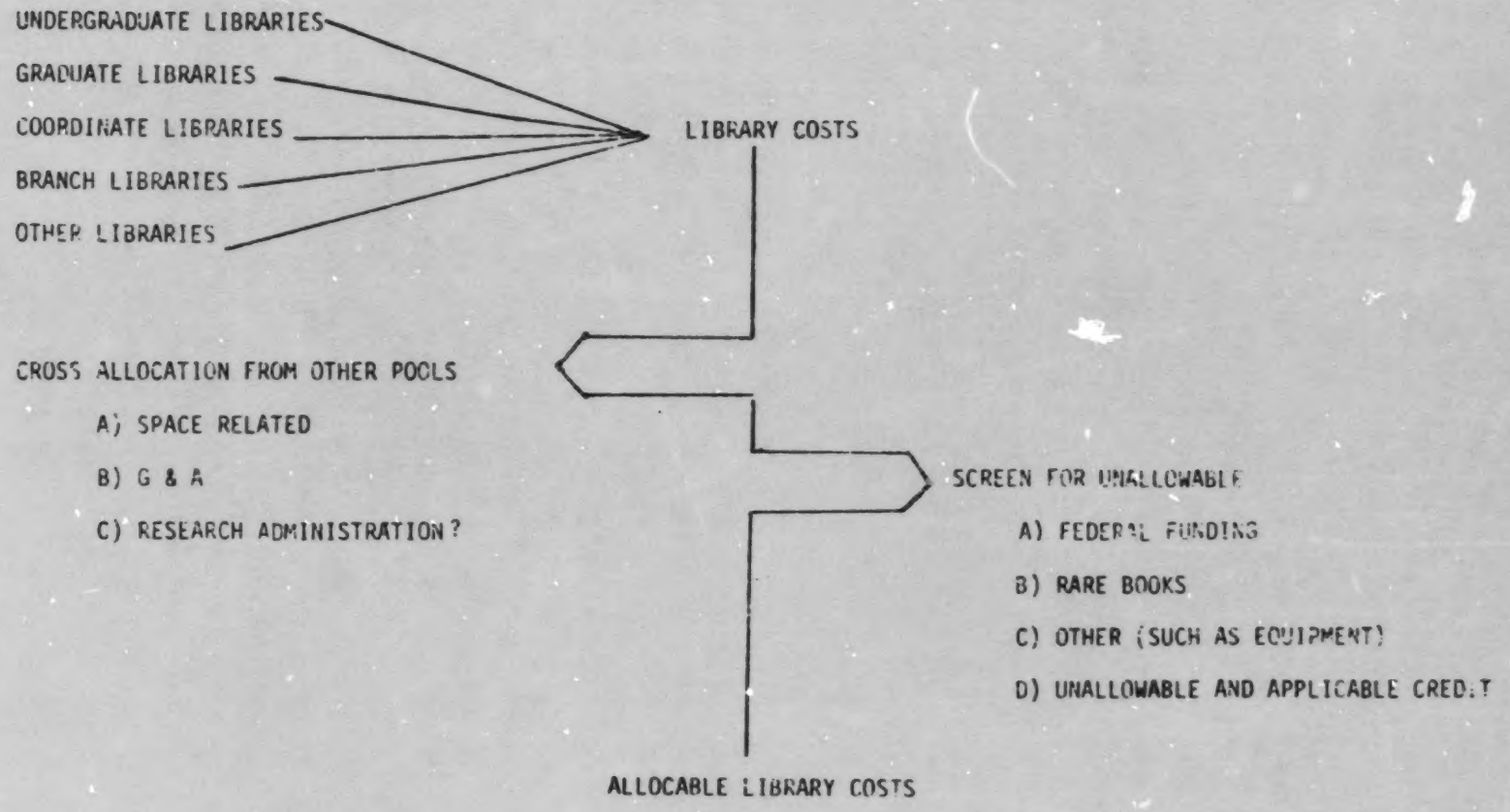
Costs for depreciation of buildings and improvements, the use charge for equipment, and the allocation of operation and maintenance were taken from the Indirect Cost allocation to the library cost pool and were allocated to each facility on the basis of the net assignable square feet of each facility. The space measurements based upon a comprehensive review of library space as recorded in the University's Space Inventory file.

e. University General and Administrative Expense

The cost of University administration was taken from Indirect Cost Study and was allocated to each library facility on the basis of the net total direct costs of that facility.

EXHIBIT 1

DETERMINATION OF POOL COST



The allocable costs of each of the 30 library areas are then segregated into the two library functions of Collection Processing and Maintenance (CPM) and Public Service (PS) (for definitions see Exhibit 2). In those areas where both functions are performed, it was necessary to conduct a Library Staff Time Distribution Survey. In each of three University quarters a week-long survey was conducted in each library facility performing both Public Service and Collection Processing and Maintenance functions. During the sample periods, each library staff member accounted for hours worked by function. The head librarian was also asked to estimate the percentage of Collection Processing and Maintenance devoted to undergraduate materials during the sample period. Exhibit 2 is a sample of the survey form. The results of the survey were used to allocate the Salaries, Benefits, and Supplies and Expenses between Public Service and Collection Processing and Maintenance.

In order to allocate space-related costs of Building and Equipment Depreciation or Use Allowance and Operations and Maintenance costs among the two library functions and central library administration, a major analysis of library space was made. A determination was made as to the proportion of space used for the two library functions--Public Service and Collection Processing and Maintenance--for each of the facilities within the University Library System. For the purpose of the study, library space was defined as follows:

1. Public Service Area--all areas directly or indirectly provided for service to the public.
2. Collection Processing and Maintenance--all areas provided for selection, acquisition, cataloging, preparation, and storage of library books, periodicals, and other cataloged materials.

The central library administrative costs are allocated to each of the library facilities on the basis of the net total direct costs of each facility.

The process of segregating costs into the two basic library functions and distributing the central library administration costs to each library facility is shown on Exhibit 3.

Sample Period: July 21 through July 27

Description of Two Library Functions:

1. Collection Processing and Maintenance (labeled "CPM" in columns below)

All processes having to do with the selection, acquisition, cataloging, preparation, storage, and collection maintenance and preservation of library books, periodicals and other resource materials, including such activities as periodic binding of serials, refurbishing of older materials, and maintaining the card catalog.

2. Public Service (labeled "PS" in columns below)

All direct and indirect service provided to the public once the library materials are available for public use, including checking out materials, answering reference queries, interlibrary loans, reshelving materials, monitoring reading rooms and carrels, promoting use and access to collections, and determining public use policies and procedures.

See definition of Other Activities ("OA") in Section I instructions.

General Instructions:

1. Completed forms must be signed by the Head Librarian and returned to the Director of Libraries' office no later than two days following the end of the sample period.

2. Please retain a copy of the completed forms and all detailed supporting information, including a description of how you instructed and gathered the information from individual employees and their individual time submissions, in your files pending government audit.

Specific Instructions:

Section I

1. List all employees, including yourself and all full and part-time salaried, casual, and student employees (excluding work study students) by name with their job classification (such as Librarian II, Head Librarian, Technical Processer I)

2. Each day during the sample period record for each employee the number of hours spent on the two library functions described above. Employment time spent on Other Activities (such as coffee breaks, general staff meetings, administrative and personnel matters) should be reported in the column labeled "OA" below. The sum of hours reported in the CPM, PS, and OA columns for each day for each employee must equal the total hours worked that day.

Section II

1. For each day in the sample period, record one percentage representing the percent of the total Collection Processing of your library relating specifically to undergraduate studies which your library collection is designed to support, such as materials ordered by faculty for undergraduate courses, ordered by undergraduates, and, in general, materials which would not be acquired were it not for the undergraduate program in your area.

2. Retain in your files documentation regarding your method and all detailed calculations for deriving the undergraduate collection processing percentage.

Section I: (Rounded to the nearest hour)

		1st Day			2nd Day			3rd Day			4th Day			5th Day			6th Day			7th Day		
Employee Name	Job Classification	CPM	PS	OA	CPM	PS	OA	CPM	PS	OA	CPM	PS	OA	CPM	PS	OA	CPM	PS	OA	CPM	PS	OA
1.																						
2.																						
3.																						
4.																						
5.																						
6.																						
7.																						
8.																						
9.																						
10.																						
11.																						
12.																						
13.																						
14.																						
15.																						

Section II: (see instructions above)

Undergraduate % of Collection Processing							

Would you categorize this as a typical work week?

Yes_____ No_____ (explain briefly)

The above table is an accurate representation of the distribution of time expended by the staff of this library during the sample period reported in accordance with the instructions.

Signed:_____

Head Librarian or Acting (branch or department head)

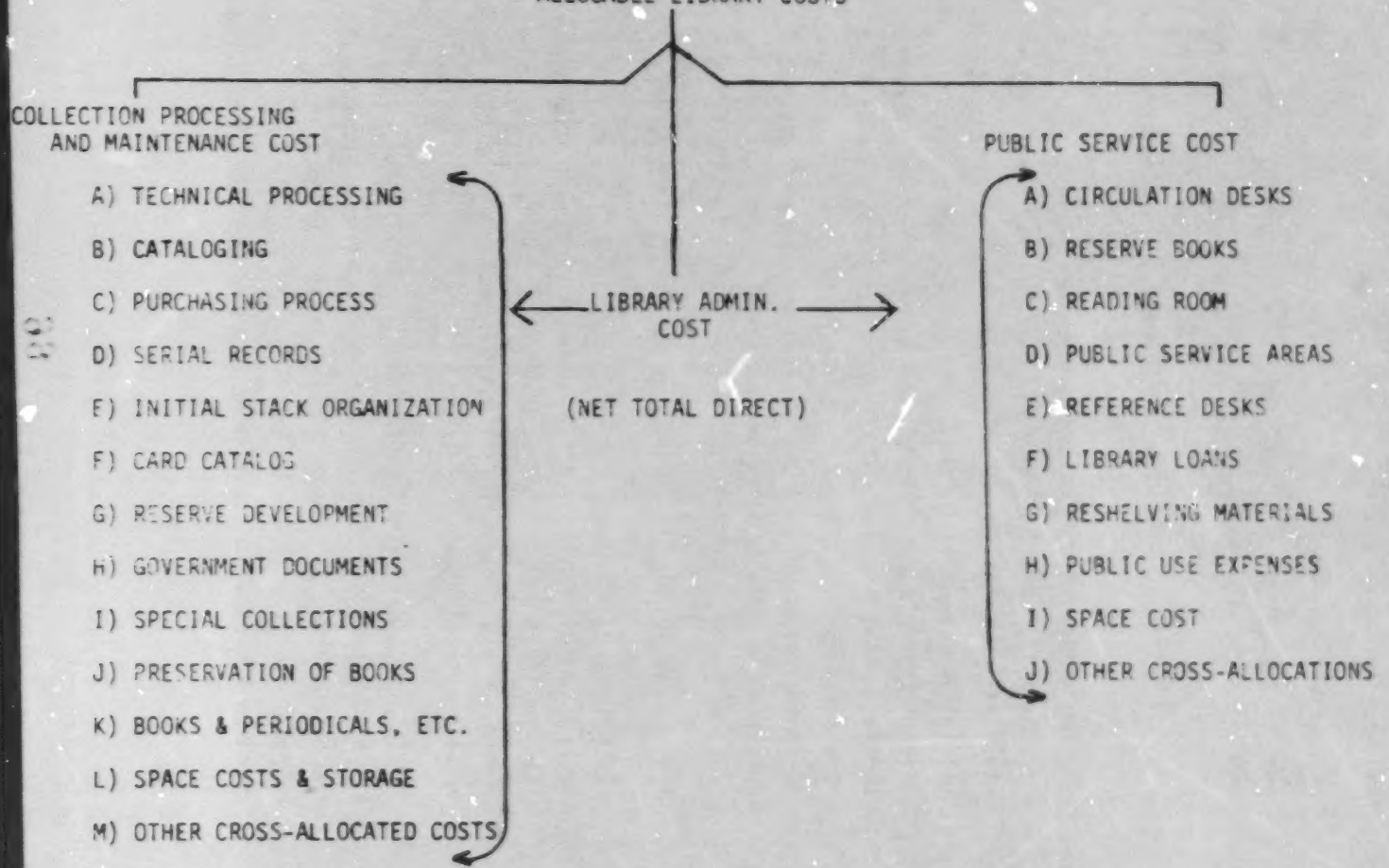
63

64

BEST COPY AVAILABLE

EXHIBIT 3

ALLOCABLE LIBRARY COSTS



(STANFORD'S APPROACH IN DETAIL - Continued)

2. Allocating the Cost Pool

The Public Service (PS) cost in each library facility is allocated to user group on the basis of a circulation survey. A sample of the survey form appears as Exhibit 4. Only the results of item (i) were used in the allocation. Other items were for library management and information purposes.

The Collection Processing and Maintenance costs in each facility (which include all book and periodical costs) are allocated to undergraduate users first, based on the percentage of CPM effort devoted to undergraduates by each facility. The remaining costs were then allocated between graduate and faculty/staff users based on the primary user group population ratios. Population distribution data on an academic University-wide basis is compiled using Fall registration data for students and personnel headcount data for faculty and staff. This data was used to identify the population ratios for primary user groups for each library facility.

The allocation process is shown schematically in Exhibit 5.

3. Aggregation of Costs by User Group

Costs of each library facility have now been allocated to user groups. Said costs are accumulated by user group for each facility and then summed for the entire library system, producing the user percentage relationships indicated earlier.

4. Allocation of User Group Costs to University Functions

Exhibit 6 shows the allocation from user groups to University functions, the bases for which were discribed earlier. This process results in the allocation of around 25% of the allowable library costs to the Sponsored Research function.

BEST COPY AVAILABLE

EXHIBIT 4

(i) I AM A (select one only):

Col 9

- ☐ 1 Stanford Undergraduate freshman or sophomore
- ☐ 2 Stanford Undergraduate junior or senior
- ☐ 3 Stanford Graduate student
- ☐ 4 Stanford Faculty
- ☐ 5 Stanford Staff
- ☐ 6 Stanford Community (spouse, alumnus, visiting fellow, etc.)
- ☐ 7 Stanford Post-doctoral
- ☐ 8 Non-Stanford user

(ii) MY SCHOOL IS (select one only):

Col 10-11

- ☐ 00 Undeclared Major
- ☐ 01 Business
- ☐ 02 Earth Science
- ☐ 03 Education
- ☐ 04 Engineering (includes Operations Research)
- ☐ 05 Humanities & Social Sciences (excludes Life & Physical Sciences)
- ☐ 06 Life and Physical Sciences (includes Biology, Chemistry, Computer Science, Mathematics, Physics, Statistics)
- ☐ 07 Law
- ☐ 08 Medicine
- ☐ 09 Food Research Institute
- ☐ 10 SLAC
- ☐ 11 Hoover
- ☐ 12 Jackson Library Fee Card Holder
- ☐ 13 Law Library: Member of the Bar
- ☐ 14 Other Stanford: please specify _____
- ☐ 15 Other non-Stanford: please specify _____

(iii) How many items (i.e. books, periodicals, tapes, etc.) did you use IN TOTAL? Col 12-13 ☐☐

(iv) What is the primary purpose for using the above items?

Col 14

- ☐ 1 Course Work
- ☐ 2 Research
- ☐ 3 Other

PART II: For Library Use:

CHECK SERVICE PROVIDED: Col 15 ☐ 1 Circulation Col 16 ☐ 2 Reference Question

EXHIBIT 5

COLLECTION PROCESSING AND MAINTENANCE COSTS

(PRIMARY USER GROUP)

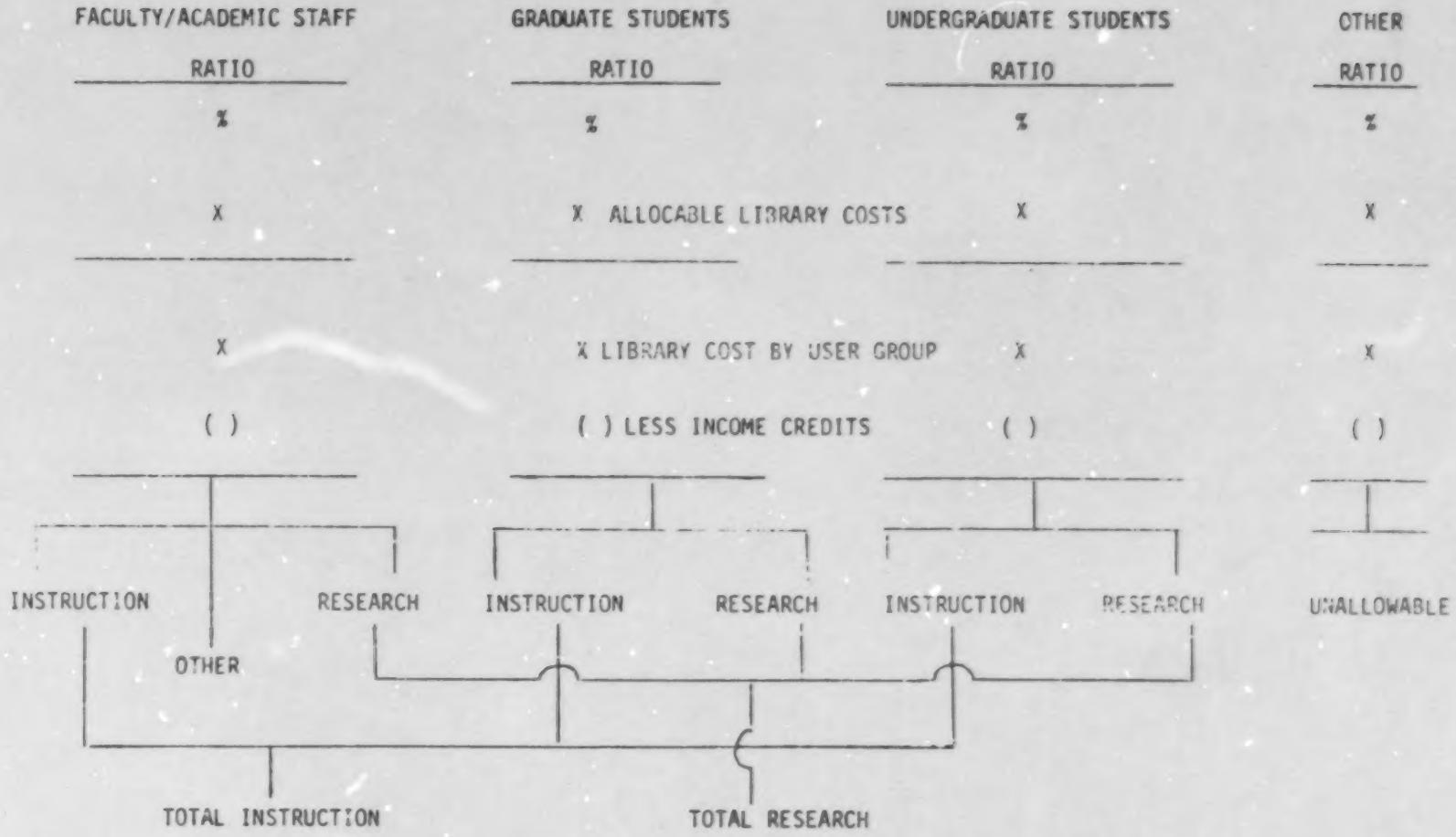
FACULTY/ACADEMIC STAFF	GRADUATE STUDENTS	UNDERGRADUATE STUDENTS
$	$	$

PUBLIC SERVICE COSTS

(CIRCULATION SURVEY)

	FACULTY/ACADEMIC STAFF	GRADUATE STUDENTS	UNDERGRADUATE STUDENTS	OTHER
	$	$	$	$
TOTAL	$	$	$	$
RATIO	%	%	%	%

EXHIBIT 6


FACULTY/ACADEMIC STAFF
RATIO
%
X
X
( )
INSTRUCTION
OTHER
RESEARCH
TOTAL INSTRUCTION
GRADUATE STUDENTS
RATIO
%
X ALLOCABLE LIBRARY COSTS
X LIBRARY COST BY USER GROUP
( ) LESS INCOME CREDITS
INSTRUCTION
RESEARCH
TOTAL RESEARCH
UNDERGRADUATE STUDENTS
RATIO
%
X
( )
INSTRUCTION
RESEARCH
OTHER
RATIO
%
X
( )
UNALLOWABLE

WORKSHEETS
CORNELL UNIV.
2 PP.

CORNELL UNIVERSITY LIBRARIES

Library Expense and Use Information
Endowed 1975-76

Location	1975-76 Expenditures	1975-76 % Research	1975-76 $ Research
Salaries & Wages			
Business	78,181	50.0	39,091
Engineering	65,711	63.6	41,797
Fine Arts	65,593	39.0	25,581
Hotel	27,670	30.0	8,301
Law	79,216	25.0	19,804
Olin - except Reference	341,289	51.0	174,057
Olin - Reference	154,882	38.0	58,855
Physical Sciences	66,890	55.0	36,790
Uris	223,936	20.6	46,131
Math*	15,162	40.9	6,201
Music*	40,160	40.9	16,425
Africana*	30,809	0	0
Special Research Collections**	238,426	100.0	238,426
Sub-total	1,427,925	49.8	711,454
Technical Services			
Law	99,955	100.0	99,955
Olin	1,041,396	87.0	905,975
Sub-total	1,141,351	88.1	1,005,930
Sub-total Public Services and Tech, Services	2,569,276	66.8	1,717,384
Administration	299,962	66.8	200,375
Total Salaries & Wages	2,869,238	66.8	1,917,759
Books			
Law	206,616	100.0	206,616
Olin****	1,320,553	87.0	1,148,881
Total	1,527,169	88.7	1,355,497
General Expense*****	445,301	66.8	297,461
Grand Total	4,841,708	73.7	3,570,727

August 18, 1976

* Not in survey because of size.

** Department of Manuscripts and Archives, Rare Books, Icelandic, History of Science and Wason Collection.

*** Salaries of $27,670 for Hotel not part of University Library Accounting Report. This does not include $58,567 of Salary funds paid by Government grants; $22,859 salaries and wages paid by S.E. Asia Program; nor does it include the portion of salaries paid to Library personnel by other departments.
FRINGE BENEFITS NOT INCLUDED

**** The Olin figure for books cover purchases for all departmental and college libraries on the Endowed campus (including $10,573 for Hotel). The following have been excluded from the figure for books: Library Associates $17,619; Government grant $1,918; NDEA funds transferred from S.E. Asia $20,000 and $11,409 from China-Japan.

***** General Expense excludes $51,490 Capital Equipment and $8,062 Government Grants

All figures in this report have been reconciled to 1975-76 EXPENSE BY BUDGET CATEGORY UNIVERSITY LIBRARY, pages 161 and 162.

Medical College Library figures NOT INCLUDED.

The money expended for our Rare Book Department has not been spent on Museum items, but for material of research value. In fact the materials we have are basic research tools, We have and have had Government grants as follows to support work materials in our Lafayette Collection:
USA/GSA/NHPC grants:

10/1/71 - 12/1/72	$ 35,135
12/1/72 - 4/30/74	36,000
1974-75	36,895
1/28/75	33,500
7/1/75 - 6/30/76(extended)	46,700
12/1/75 - 12/31/77	11,948
1/1/76 - 12/31/77	80,000

NEH grant:

1976-77	34,273	Indirect Cost 15,735.64

University of Arizona — BEST COPY AVAILABLE — C-5

Fiscal Year 1973-74

Allocation of Library — 1 of 3

WORKSHEETS
UNIV. OF ARIZONA
2 PP.

	Reference								
1	Exh. B	Departmental Administration							19803687
2	Sch. V	Use Charge - Buildings							9816545
3	Sch. VI	Use Charge - Equipment							5642906
4	Sch. VII	Library Books & Periodicals							14605767
5	Sch. XIII	State Costs Allocation							305839
6	Exh. C-1	Remission of Tuition							857709
7	Exh. C-3	Operation & Maintenance							27166158
8	Exh. C-4	General & Administration							9831870
9		Less:							
10	Sch. XIII	Library Fines							(391661.87)
11		Total to be allocated							45377388
12									
13									
14									
15	Basis of allocation - Population								
16									
17									
18						Educational Service Agreements	All Other		
19		Population	Per Cent	Research				Total	
20									
21	On Payroll Records:								
22	Instruction	4573	21.68 %				98378092	98378092	
23	Research	3551	16.87 %	76551587				76551587	
24	Educ. Serv. Agreements	339	1.61 %		7305753			7305753	
25	Graduate Students:	8765	41.56 %				188588262	188588262	
26	Undergraduates:	3855	18.28 %				82949794	82949794	
27	Total	21089	100.00 %	76551587	7305753		369916148	453773488	
28				16.9%	1.6%		81.5%		
29	Exh. C-5								
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40	* Excludes	*3631343 of Public Service (1.0%)							

Technique for distribution of costs was based on population. Population was equated to FTE's. Result was a relatively low value for undergraduate students. HEW auditors did not specifically audit or approve this procedure. Institution currently is reviewing some alternatives.

BEST COPY AVAILABLE

University of Arizona
Fiscal Year 1973-74
Worksheets for Distribution of Library Expenses

		1 Educational service Agreements	2 Instruction	3 Research	4 Total	
1						1
2	Salaried Faculty + Staff	—	2187	1617	3804 X	2
3						3
4	Regular Wage Employees	—	1848	1367	3215 X	4
5						5
6	Salaried Graduate Assistants	339	15	186	540 X	6
7						7
8	Student Wage Employees	—	523	387	910 X	8
9						9
10	Regular Graduate Students		8765		8765	10
11						11
12	Undergraduate Students	—	3855	—	3855	12
13						13
14	Totals	339	17193	3557	21089	14
15	Per Cents	1.61 %	81.52 %	16.87 %	100.00 %	15
16						16
17						17
18						18
19						19
20						20
21						21
22						22
23						23
24						24
25						25
26						26
27					3804	27
28					3215	28
29					540	29
30					910	30
31		339	4573	3557	8469	31
32	C-5 (3 of 3)	4 %	54 %	42 %	100 %	32
33						33
34						34
35						35
36						36
37						37
38						38
39						39
40						40

BEST COPY AVAILABLE

THE UNIVERSITY OF MICHIGAN
Library Usage Questionnaire

WORKSHEETS
UNIV. OF MICHIGAN
2 PP.

LIBRARY: _____ DATE: ___

ADDRESS: _____ TELEPHONE: _____

These questions pertain to fiscal year 19 _

	Faculty and Research Staff	Other Staff	Students	Others	Total
I. Staff Estimate percentages of your library's total staff time (full and part-time staff) devoted to serving or doing work arising out of serving	%	%	%	%	100%
II. Acquisitions Of the acquisitions last year for your library show which user group(s) the acquisitions were primarily intended to serve	%	%	%	%	100%

III. Space

A. Show in percentages your library's use of space for the following functions:

Collections _____%

Reader Space _____%

Work Space _____%

100%

Allocation of library expenses to the indirect costs of research is a two-step process. First, library costs are apportioned to faculty & research staff usage based on results of a questionnaire answered by heads of library units. Then, apportioned amount is allocated to instruction & sponsored research on basis of direct salaries and wages of these two activities.

B. 1. Of the space used for collections, estimate the proportions occupied by volumes/materials used by or acquired for	%	%	%	%	100%
2. Estimate the percentages of your library's total reader space used by	%	%	%	%	100%
3. Estimate the percentages of your library's total working space (office, charging desk, files, etc.) used in rendering library service to	%	%	%	%	100%

Schedule 9

The University of Michigan
Indirect Cost Computation Based On
1975-76 Actual Costs
Research Agreements

Library Expenses

Expenses	Schedule Reference	Amount
Operating expenses:		
Salaries and wages		$ 6,012,853
Expenses (including book purchases of $2,612,133)		3,516,321
General and administrative expenses	6	732,732
Total operating expenses		10,261,906
Less Extension Library operating expenses		(114,933)
Total operating expenses subject to apportionment		10,146,973
Space related expenses:		
Building use charge	2	423,134
Equipment use charge	3	161,504
Heating plant and utilities	4	804,858
Plant expenses	5	1,557,458
Total space related expenses		2,946,954
Less space expenses related to Extension Library		(32,711)
Total space expenses subject to apportionment		2,914,243
Total library expenses subject to apportionment		$13,061,216

Apportionment

Based on the results of questionnaires answered by heads of library units, the following percentages apply to faculty and research staff usage:

Operating expenses	$10,146,973		
Less book purchases	(2,612,133)		
Net operating expenses	7,534,840	@ 28.97%	$ 2,182,843
Space related expenses	2,914,243	@ 32.39%	943,923
Book purchases	2,612,133		
Less book purchases for Extension Library	(16,456)		
Net book purchases	2,595,677	@ 43.89%	1,139,243
Apportionment of library expenses to faculty and research staff			$ 4,266,009

Allocation

	Direct Salaries and Wages	Percent	Amount	To Schedule
Instruction	$ 94,789,153	75.08%	$3,202,920	
Sponsored research	31,465,103	24.92	1,063,089	1
Total	$126,254,256	100.00%	$4,266,009	

BEST COPY AVAILABLE

WORKSHEETS
TEXAS A&M UNIV.
2 PP.

Texas A & M University
Statement of Library Expenses
For the Year Ended August 31, 1976

Page 1 of 2

Apportionment Based on User Population

Agency	Population	Amount Apportioned	Reference
Texas A & M University	2149	263397	
[illegible]	1485	182009	To Exhibit D ✓
[illegible]	366	44859	Exhibit E ✓
Texas Agric. Exp. Station	216	26474	To Exhibit F ✓
Texas Agric. Ext. Service	407	49516	
Texas Tech University	10	8580	
Texas Eng. Extension Service	128	15688	
Texas A & M Univ. Student Totals	20542	2517723	To Schedule C-5 ✓
	25260	3108241	From Sch. C-2, p 2

1/N .564708 = f/n

	Direct Salaries & Wages	Amount Allocated	
Texas A & M University			
Instruction (Sch. C-10)	29167442	209749	To Exhibit C ✓
Organized Research (Sch. C-10)	5796062	41681	To Exhibit C
Extension (Sch. C-10)	1663351	11962	To Exhibit C
Totals	36626855	263397	A

f .007191226 = n

Extension and Public Service Salaries & Wages consist of Extension & Public Serv. 1663351 A

Allocation was made on the basis of potential user population. It appears that this allocation basis may not be equitable in that it does not give adequate recognition to the actual utilization of library facilities. A review is planned in the near future.

BEST COPY AVAILABLE

Initials Date
Prepared By PC 2/22/77
Approved By

Texas A & M University — I.A.1.2 C-2
Schedule of Library Expense
For the Year Ended August 31, 1976 Fix 2H2

Indirect Cost Category	Indirect Cost Amount	Reference
Staff Expense		
Salaries & Wages	1 346 125	From Dept. #'s 14130
Staff Benefits	175910	From Schedule C-3 (14130
General Administration	141536	From Schedule C-1
Total Staff Expense	1714291	
Purchase of Books & Periodicals	521606	From Total, below
Other Operating Expense		
Use Charges		
Buildings	66287	From Schedule C-4
Improvements	6579	From Schedule C-5
Equipment	28693	From Note 2, below
Physical Plant Operation & Maintenance	577355	From Schedule C-3
Other Expenses	206914	From Total, below
Total Other Operating Expense	875160	
Total Library Expense	3111147	
Less Library Income - Sales & Services	<2906>	Sch. C-1, H/P
Total Library Indirect Costs	3108241	

BEST COPY AVAILABLE

Library Costs
University of Utah
FY 76

WORKSHEETS
UNIV. OF UTAH
8 PP.

CIRCULATION STUDY
TYPE OF BORROWER

FACULTY	[illegible]	[illegible]	662148
GRADUATE	128174	[illegible]	1202079
UNDERGRADUATE	331022	[illegible]	[illegible]
	521814	[illegible]	[illegible]

FACULTY

INSTR	72.62%	[illegible]
RESEARCH	[illegible]	[illegible]
ESA	[illegible]	[illegible]
PUBLIC SERVICE	[illegible]	[illegible]
TOTAL		[illegible]

STUDENTS

INSTR.	[illegible]	-305,202 x 6.66% x 49.8%	
RESEARCH	[illegible]		x 40.21
ESA	[illegible]		x 3.43
PUBLIC SERVICE	[illegible]		x 28.22
AEC	[illegible]		x 28.14
TOTAL	[illegible]		

SUMMARY

INSTR	[illegible]
RESEARCH	[illegible]
ESA	[illegible]
PUBLIC SERVICE	49951
AEC.	4918
TOTAL	4967350
NON-ALLOC.	142624
" "	107441
TOTAL LIBRARY	5217415

BEST COPY AVAILABLE

	1	2	3	4	5
1	LIBRARY COSTS ASSOCIATED				
2	WITH STUDENTS		4305202		
3					
4	STUDENT WORK HOURS		3.42%		
5					
6	TOTAL COST ALLOCATED TO		287587		
7	STUDENTS				
8					
9	% ALLOCATED TO RESTRICTED ACCTS.		49.86%		
10					
11	TOTAL LIBRARY TO RESTRICTED		143391		
12					
13	% ALLOCATED TO INSTR. + OTHER		50.14%		
14					
15	TOTAL LIBRARY TO INSTR + OTHER		144196		
16					
17					
18					
19	TOTAL RESTRICTED				
20	RESEARCH - ON	40.21	57658		
21					
22	AEC	3.43	4918		
23					
24	ESA - ON	28.22	40465		
25					
26	PUBLIC SERVICE	28.14	40350		
27					
28		100.00	143391		
29					
30	INSTRUCTION		4305202		
31	LESS RESTRICTED		(143391)		
32					
33					
34	TOTAL INSTRUCTION			4161811	
35					
36					
37					
38					
39					
40					

BEST COPY AVAILABLE

TOTAL PROFESSORS

	Initials	Date
Prepared By		
Approved By	3	

	1	2	3	4	5	6	7
		INSTR	RESEARCH	E S A	PUBLIC SERVICE		
1							
2	OTHER FACULTY						
3		17.2%	4401	628	21%	22537	
4	DEAN'S & DEPT.						
5	CHAIRMEN	2512	1734	311	189	4746	
6							
7		19813	6135	939	396	27283	
8		72.6%	22.4%	3.4%	1.4%		
9							
10							

OTHER PROFESSORS

BEST COPY AVAILABLE

	Initials	Date
Prepared By		
Approved By	4	

OTHER FACULTY

	2	3	4	5	6	7
	INSTR	RESEARCH	ESA	PUBLIC SERVICE		
1						
2	625		10	5		
3	868	53	-	-		
4	601	47	3	9		
5	625	300	-	-		
6	554	260				
7	486	84	20	2		
8	580	-	-	-		
9	594	40	5	3		
10	1647	55	20	28		
11	616	-	38	8		
12	672	150	10	60		
13	640	375	-	5		
14	853	190				
15	652	48	-	5		
16	162	86	5	2		
17	860	570	-	-		
18	1420	175				
19	[illegible]	50	5	15		
20	552	10	-	5		
21	478	-	141	20		
22	801	71	95	16		
23	142	434	77	-		
24	892	10	9	5		
25	20	25	-	5		
26	428	37	23	-		
27	20	213	-	-		
28	203	123	30	1		
29	87	42	9	5		
30						
31	15	13	3	5		
32	5	235	3	5		
33	41	137	10	-		
34	255	45	-	-		
35	60	33	-	-		
36	15	120	66	5		
37	65	90	27	-		
38						
39	17294	4401	628	214	22537	
40	76.74%	19.53%	2.79%	.94%		

83

Figures taken from OA Surveys for professors, instructors & TA's.

BEST COPY AVAILABLE

LIBRARY COSTS

							OTHER	EMPLOYEE BENEFIT	
3-3	LIBRARIES	321979	11295	3205619	1878997	10264	1016446	292907	
	LESS								
	MUSEUM OF FINE ARTS	(29822)	(3983)	(120939)	(62359)	(717)	(47916)	(9822)	
	FINE ARTS INSURANCE	(18306)		(18306)			(18306)		
	UTAH MUSEUM OF NATL HISTORY	1161		1161			1161		
	TOTAL	(141967)	(3983)	(137944)	(62359)	(717)	(46091)	(9822)	
	TOTAL 8-3	3173012	107312	3065700	1813993	17897	952515	283086	
3-4	LIBRARIES	341516	(2038)	343554	(164)		343720		
3-5	LIBRARIES	102991	12074	(28)	95395	67569	1938	26383	
3-6	LIBRARIES	79374	12794		66580	8499	5263	52810	
	LESS								
	UTAH MUSEUM OF NATL HISTORY	(3626)	(990)		(4616)			(4616)	
	TOTAL 8-6	75748	11804		61964	8499	5263	48230	
3-7	LIBRARIES	131600			131600			131600	
	TOTAL LIBRARIES	3830347	129459		3701191	1898945	24298	1504518	283086
	NON-ALLOCABLE	197695	9971		142824	62359	217	6973	9822
	TOTAL	3971912	139126	(28)	3943516	1950679	24960	1670299	292907

TOTAL LIBRARY	3943315
DEPRECIATION	317415
PAY. PLANT	817466
ETC.	237119
TOTAL LIBRARY	5217415
NON-ALLOC.	(142824) (109991)
TOTAL	4962360

BEST COPY AVAILABLE

CIRCULATION DEPARTMENT -- MONTHLY STATISTICAL REPORT

Circulation Statistics for the Month of June, 1976

MARRIOTT LIBRARY:

	CIRCULATION					GEN. RESERVE	
	Fac.	Grad.	UnGrad	Total	Cum.	Total	Cum.
Books	3482	3247	5160	11,889	206,175	1012	32,376
Periodicals (unclassed)	241		747	988	21,952	33	663
Documents	74	180	129	383	5236	20	406
Other Format			40	40	732	2932	63,434
Exit Permits			164	164	2599		
Total-- 1975-76	3797	3427	6240	13464	236,693	3997	96,879
1974-75	4408	3302	5738	13,448	241,128	2227	92,045
% Increase (+ or -)	-.138	+.037	+.087	+.001	-.018	+.794	+.053
Cum. Total-- 1975-76	47,829	44896	143,968	236,693		96,879	

INTERLIBRARY LOANS		
	Total	Cum.
Items Borrowed	403	4527
Items Lent	403	6054
Total-- 1975-76	806	10,581
1974-75	809	10,242
% Increase (+ or -)	-.004	+.033
Cum. Total	10581	

Soc. Wok Reserve items are under Undergrad. Other forms should be under Grad Book al,

BRANCH LIBRARIES:

	BUSINESS					MATHEMATICS					SOCIAL WORK				
	Fac.	Grad.	UnGrad	Total	Cum.	Fac.	Grad.	UnGrad	Total	Cum.	Fac.	Grad.	UnGrad	Total	Cum.
Books	389	3390	3638	7417	129729	58	103	12	173	1634	90	239	95	424	3817
Periodicals (unclassed)	326	986	1056	2368	41353	25	31	2	58	637	12	42	10	64	715
Documents											2	10	1	13	79
Other Format										1		24	262	286	18,279
Total-- 1975-76	715	4376	4694	9785	171,080	83	134	14	231	3272	104	315	368	787	22,890
1974-75	584	3464	3648	7696	192,980	22	42	8	72	1673	138	180	160	478	21627
% Increase (+ or -)	+.224	+.263	+.287	+.271	-.114	+2.77	+2.19	+.75	+2.21	+.35	-.246	+.75	+1.3	+.646	+.058
Cum. Total-- 1975-76	8865	79387	82,828	171,080		890	1195	187	2272		649	2716	19525	22890	

BEST COPY AVAILABLE

CONTINUED CIRCULATION STATISTICS

for the month of June, 197

EXIT PERMITS:

	Total	% of Monthly Total	Cum.	% of Cum. Total
Audio-Visual	13	.079	239	.088
Documents	19	.116	291	.112
General Reference	26	.159	441	.170
Lit. & Fine Arts	16	.097	282	.108
Middle East	4	.024	116	.045
Minorities				
Science & Eng'g	57	.348	810	.311
Soc. & Beh. Science	21	.128	280	.105
Western Americana	6	.037	117	.045
Others	2	.012	33	.013
Total -- 1975-76	164		2599	
1974-75	138		2502	
	+.188		+.038	

RECALLS:

	Total	% of Monthly Total	Cum. Total	% of Cum. Total
Books	99	1.0	2747	1.0
Periodicals				
Total-- 1975-76	99		2747	
1974-75	163		3349	
	-.352		-.179	

POPULATION COUNT:

	Total	Cum.
East Entrance	22,422	774,483
West Entrance	32,220	688,476
Total-- 1975-76	54,642	1,462,959
1974-75	53,524	1,447,373
	+.020	+.010

OVERDUES:

Monthly Total-- 1975-76	3670
1974-75	3342
Cum. Total	32,534
	+.098

SEARCHES:

	Books	Period.	Total	% of Monthly Total	Cum. Total	% of Cum. Total
Patron						
Departmental						
Total-- 1975-76						
1974-75	305	31	336		5756	
Cum. Total						
Located						
Not Located						

RUSH BOOKS:

Monthly Total-- 1975-76	116
1974-75	190
Cum. Total	1481
	-.389

BEST COPY AVAILABLE

CUMULATIVE TOTALS

for the month of June, 1976

TYPE OF MATERIAL:

	Circ.	Gen.Res.	Bus.	Math.	Soc.Wk.	Total	% of mon. Total	Cum.Total	% of Cum. Total
Books	11889	1012	7417	173	424	20,915	.740	373,729	.705
Periodicals (unclassed)	988	33	2368	58	64	3511	.124	65,320	.123
Documents	383	20			13	416	.015	5720	.011
Other Format	40	2932			286	3258	.115	82,446	.156
Exit Permits	164					164	.006	2559	.005
Total-- 1975-76	13464	3997	9785	231	787	28,264		529,814	
1974-75	13,448	2227	7696	72	478	23,921		549,463	
% Increase (+ or -)	+.001	+.794	+.271	+2.21	+.646	+.182		-.036	
Cum. Total-- 1975-76	236,693	96,879	171,080	2272	22,890	529,814			

TYPE OF BORROWER:

	Circ.	Gen.Res.	Bus.	Math.	Soc.Wk.	Total	% of mon. Total	Cum.Total	% of Cum. Total
Faculty	3797	3997	715	83	104	8696	.308	70598	.133
Graduate	3427		4376	134	315	8252	.292	128,194	.242
Undergraduate	6240		4694	14	368	11,316	.400	331,022	.625
Total-- 1975-76	13,464	3997	9785	231	787	28,264		529,814	
1974-75	13,448	2227	7696	72	478	23,921		549,463	
% Increase (+ or -)	+.001	+.794	+.271	+2.21	+.646	+.182		-.036	
Cum. Total-- 1975-76	236,693	96,879	171,080	2272	22,890	529,814			

GENERAL INFORMATION
NACUBO
9 PP.

NACUBO Professional File

Cost of Federal Research Performed by Universities: A Call for Equity

by Max A. Binkley

The commitment of the federal government to research has produced rapid developments in science and technology. The research effort supports the health and welfare of the people of the United States, the national defense and the economy.

Contributing to this advancement has been research performed by the universities of the nation. Encouraged by the federal government, institutions of higher education have entered into agreements with the government to perform basic research which is in the national interest and which conforms with institutional objectives. For a number of leading institutions of higher education, the research mission has become a major function alongside instruction and has provided a valuable adjunct to graduate education.

Commensurate with the effective performance of both research and instruction, the universities have augmented their faculties, their support staffs and their facilities. A large part of the expansion required for federal research has been supported by reimbursements from the government. However, the government has not reimbursed universities for the full cost of federal programs and the institutions have had to use funds from instruction and other programs to cover the shortfall.

Government policy in regard to research performed by universities has imposed cost sharing requirements and arbitrary restrictions on the reimbursement of indirect costs. The resultant use of other institutional funds for government programs has contributed to the financial straits in which the universities find themselves and from which they seek to recover.

Major research universities are unable to solve the problem by curtailing government research without severe restructuring of the institutions and changing their role in the affairs of the nation. Therefore, they seek equitable treatment by the government. In spite of this need, there are now new pressures in the government which would have the institutions bear an even larger share of the cost of federal programs.

This issue of Professional File *is not copyrighted, and NACUBO encourages additional reprintings and distribution as appropriate. For further information, contact the National Association of College and University Business Officers, One Dupont Circle, Suite 510, Washington, D.C., 20036.*

Function of Cost Reimbursement

Expressed in its simplest terms, the function of cost reimbursement is as follows: Costs are incurred when services are performed. For an operation to survive, the costs incurred must be fully covered by revenues or reimbursements. This is true whether the costs are directly identified with an activity as direct costs, or the costs are indirectly related to the activity.

Shortfall Borne by Universities

Two principal factors lead to the shortfall of federal cost reimbursement borne by universities:

1. Although applicable indirect costs are audited and negotiated under government cost principles established by Federal Management Circular (FMC) 73-8 (A-21) which, in general, but not completely, are designed for reimbursement of full cost, the principles in practice are often subverted by arbitrary limitations imposed by law or agency practice.

2. The government imposes requirements on the institutions to share in the costs of many federal programs.

Such mandatory cost sharing, imposed on an institution without choice when it enters into a federal agreement, is distinguished from voluntary cost sharing which an institution may choose to bear in recognition of its corollary interest in a program and the benefit it expects to derive. Voluntary cost sharing is a practice strongly encouraged by agencies of the federal government.

In this writing, the term "shortfall" refers to arbitrary limitations on indirect cost recovery and mandatory cost sharing requirements, but excludes voluntary cost sharing.

Full Costs are Paid for Services by Other Organizations

While the role of institutions of higher education may be unique, it is noted that the federal government recognizes the principle of full cost reimbursement for research performed by other organizations. Commercial firms and not-for-profit organizations receive full payment for direct and indirect costs, and in addition commonly receive a fee. Rarely are such organizations required to share costs, except when the results are likely to lead to a long-term monetary benefit to the performing organizations.

In the case of universities, the historical relationship with the government was considered to be that of a partnership, emphasizing a mutuality of interest directed at the public good. As government policies and practices became more restrictive, the partnership concept somewhat faded, evolving in the direction of a vendor-purchaser relationship. A number of individuals in higher education desire a restoration of the partnership relationship, believing that the appropriate role of universities is unlike that of other performing organizations.

Under any concept of the relationship between universities and the government, however, the federal government chooses those projects it will support based on the expectation of obtaining value in the national interest, just as it does in entering into agreements with commercial firms and not-for-profit organizations.

Misgivings About Paying Full Cost to Universities

For one reason or another, uncertainties have surrounded the appropriateness of paying full cost to universities, especially in regard to paying full indirect costs. Opinions are expressed that the institutions should not be reimbursed for indirect costs because they would have to incur such costs anyway, or that indirect costs are not real costs. The claim is made that full cost should not be paid by the government because the institutions derive benefits from federal projects. Why such assertions are not made about payments to commercial firms and other organizations is unclear.

Higher education organizations and institutions have given lucid explanations of the validity of and need for full cost reimbursements, but these have yielded only limited results.

Severity of the Consequences

To those concerned about the welfare of academic institutions, misgiving about the appropriateness of full cost reimbursement is cause for apprehension because it leads to potentially severe consequences. Prodded by the Congress to better control indirect costs, the Department of Health, Education, and Welfare in 1975 proposed changes in cost principles which would cause the institutions to bear an additional $250 million to $300 million a year of the cost of federal programs.

In January 1977 DHEW revised its proposal to be less severe. Preliminary analysis of that proposal indicated the institutions would have to bear additional costs of $190 million to $225 million per year. Implementation of the DHEW proposal would result in serious damage to higher education and severe detriment to the scientific research base of the nation.

The Plight of Higher Education

The threat of additional damage continues to imperil the already precarious financial condition of the institutions. As costs have increased, tuition rates have been raised to the point of being prohibitive. State legislatures are funneling relatively more funds into social programs and relatively less into education. Income from endowments and contributions has not kept pace. Universities have been examining costs and programs, effecting retrenchments where possible, reallocating available resources and endeavoring to make necessary adjustments without serious impairment to the accomplishment of their missions.

The present fiscal distress of universities is in part caused by the failure of the federal government over the years to pay the full costs of the research and educational services performed under government agreements. When proposals are made to worsen the situation, the institutions naturally rise in protest. No one offers an answer to the inevitable question: Where are the funds to come from if the government covers even less of its share?

Magnitude of Costs Absorbed by Universities

The total shortfall, caused by arbitrary limitations set by federal statutes and practices related to reimbursements of indirect costs and by requirements for mandatory cost sharing, is actually unknown. A rough approximation, based on data collected from seven leading research universities where under-reimbursement averages 10 percent, indicates that institutions participating in federal programs contribute around $250 million per year to the costs of the programs.

One public university experienced a shortfall of $2 million last year. That institution has found it increasingly difficult to justify to its state legislature the use of in-

Max A. Binkley *is vice president for finance of Colorado State University. Previously he was controller of CF&I Steel Corporation and auditor of the Economic Cooperation Administration (Marshall Plan) in West Germany. He received a B.S. degree from Miami University, Ohio, and M.S. and Ph.D. degrees from the University of Illinois, and also taught at both institutions. Binkley is chairman of the Subcommittee on Government Costing Policies of the NACUBO Committee on Governmental Relations and is editor of the COGR Audit Information Exchange. His paper, "On Living With Auditors," appeared as the October 1974 NACUBO* Studies in Management.

structional funds for federal research. Likewise it has been difficult for the institution to provide a satisfactory explanation to its undergraduate students, whose tuition is set by a formula based on instructional costs which include the costs absorbed for federal research programs.

The true federal costs borne by universities are even greater than indicated above. The shortfall in indirect cost used in the above figures consists only of the uncovered portion of the amounts otherwise allowable under rates approved by government auditors and negotiators under FMC 73-8. In addition the established principles disallow certain costs. Interest cost is disallowed even though there may be no way an institution can perform a federal research project other than by acquiring facilities, such as a computer, through credit arrangements. Among other costs specifically disallowed are those incurred for fund raising and public relations associated with research.

However the most significant shortfall in cost reimbursement is attributable to cost sharing requirements and to failure to allow the full indirect cost rate established under FMC 73-8.

Substance of Indirect Cost

Unlike *direct* costs, the very principle of reimbursing *indirect* costs of universities has been controversial in the minds of some federal officials. Consequently, the nature of *indirect* cost and the issues involved warrant special attention.

Distinction Between Direct and Indirect Costs

Indirect costs are not as different from direct costs as may be thought. Both direct and indirect categories represent genuine costs requiring the expenditure of resources. There is nothing hypothetical or fictitious about indirect costs.

Basically there is only a single distinction between the two categories: the degree to which the costs can be specifically identified with a given activity. As an example, the cost of clerical effort in compiling scientific data for a research project is clearly a direct cost of carrying out that project. On the other hand, clerical effort expended in the payroll department is a cost of administering the payroll of the entire institution. Hence a portion of the cost of the payroll effort is an indirect cost of the research project, necessary for processing payments of the researchers' salaries. One type of cost is related directly to the research project; the other is related indirectly. Because indirect costs cannot be directly assigned to the benefitting activities without prohibitive administrative effort, they are allocated on carefully chosen bases which reasonably approximate the pertinent relationship. From the standpoint of accounting principles, the allocation process is a proper substitute for direct identification.

Direct and Indirect Costs of Universities

Typical *direct* costs of research performed by universities are salaries in proportion to the direct effort applied, materials and supplies used and specialized equipment as needed and authorized.

The following types of costs are categorized as *indirect* costs:

General administration

University-wide administrative activity such as accounting, purchasing, personnel, and so forth.

Departmental administration

Departmental administrative activity of deans, academic department heads, faculty, support staff, and so forth.

Sponsored projects administration

University-wide administrative activity devoted to contracts and grants.

Physical plant operation and maintenance

Custodial services, utility expenses, maintenance, protection of plant, and so forth.

Library

Depreciation or use allowance on facility costs

In all cases federal projects are only allocated a *proportionate* share of the indirect costs. General adminis-

CONTENTS

Function of Cost Reimbursement 1
Shortfall Borne by Universities 1
Full Costs Are Paid for Services by Other Organizations 2
Misgivings About Paying Full Costs to Universities 2
Severity of the Consequences 2
The Plight of Higher Education 2
Magnitude of Costs Absorbed by Universities 2

Substance of Indirect Cost 3
Distinction Between Direct and Indirect Costs 3
Direct and Indirect Costs of Universities 3
Disparagement of Indirect Cost 4
Average or Incremental Indirect Cost 4
A Bargain for the Government 4
Variations in Rates of Institutions 4
Relative Increase in Indirect Costs 5
Alleged Waste and Inefficiency 5
Proposal for Competitive Cost Bidding 6

Recent History 6
1969 GAO Report on Indirect Cost 6
1969 PMM Report on Indirect Cost 7
The Intervening Years 7
1975 Congressional Investigations Staff Report 7
1975 and 1977 DHEW Proposals to Change Cost Principles 8
1976 Proposal of Universities 8
1976 Statements of the Congress 8
The Situation Today 9

Position of Higher Education 9

tration expense, for example, is allocated between federal programs and nonfederal activity in the ratio of the total direct costs of each. Costs which are identified exclusively with nonfederal activity are assigned only to that activity.

The foregoing explanation is a highly condensed summary of FMC 73-8, the federal cost principles which are rigorously applied by the government in establishing indirect cost rates of institutions. In effect, an established rate is the maximum rate that may be claimed, while in practice many federal agreements, either by statute or agency practice, limit reimbursement of indirect cost to rates far short of an established rate.

Disparagement of Indirect Cost

Whatever the organization, indirect costs seem to give rise to complaints. Even in industry, with its long history of cost analysis, instances still occur when divisional or product managers plead that it is unfair to burden their products with a share of corporate indirect cost. To that they are told in no uncertain terms that products are losers if they fail to sell at prices adequate to cover *all* costs plus a reasonable profit.

The negative tone of some of the nomenclature used has contributed to the problem. The term "burden," now hopefully obsolete, carried a built-in negative connotation. The term "overhead" was an improvement but still had a shadow of obscurity. The term "indirect cost" is certainly more precise.

Universities have become aware that much of the stigma associated with indirect cost comes from inside the institutions: faculty members do not welcome a charge for indirect cost against their research projects. Faculty members are often not in a position to recognize fully the magnitude of the essential functions which incur indirect costs, such as the prevailing rates paid trades craftsmen, the amount of energy consumed and its cost, and so forth. The fact that faculty researchers control direct costs themselves but are assessed indirect costs puts the latter in a different light. Some faculty members tend to take for granted services such as heating and other space-related functions, accounting, personnel administration, and so forth, and believe such services should be charged to a source of funds other than their research projects.

At times faculty members have disparaged indirect costs in comments with government officials. The institutions in turn have attempted to develop internally a better comprehension of the nature and role of indirect costs, so that faculty members may understand that indirect costs are necessary costs and must be paid for.

Average or Incremental Indirect Cost

Following generally accepted accounting principles, FMC 73-8 for the most part provides for allocation of indirect costs on a proportionate or average basis. Some sources dispute the equity of averages and would have the government reimburse only incremental costs — only the additional costs caused by federal programs. In the operation of institutions which are not static, there is no realistic way to approximate what the costs would be in the absence of federal research activity. Apart from that difficulty, the concept comes up short when applied to a whole operation. Raymond J. Woodrow of Princeton University uses an example of telephone switchboards at an institution:

> Only one space is left on one switchboard, which Project A comes along and uses. Project B comes in and needs a new telephone, but this means a whole new switchboard, telephone operator and perhaps even building addition. Should Project A pay nothing for telephone service and Project B pay for the entire new switchboard and associated costs? The answer is clearly no. Average costs, not incremental costs, are generally the most equitable answer.[1]

A Bargain for the Government

In practice, institutions have typically been satisfied with the use of averages in settling indirect cost rates with federal auditors and negotiators, even though the use of averages generally works to the advantage of the government.

Actual support costs for federal research are often proportionately greater than required for the instructional function and other functions of universities. Although general administrative expense is allocated between federal programs and nonfederal programs in the ratio of the total direct costs of each, a more precise allocation would likely result in the assignment of greater costs to the government, because relatively greater effort is required to meet federal requirements for accounting and reporting, for compliance with agreements, and so forth. While the cost of utilities is allocated on square footage devoted to research and nonresearch activities, the actual consumption of utilities per square foot by research laboratories far exceeds the consumption rate of most classroom space because research facilities are high consumers of power, gas, etc. Recent significant increases in utility rates have compounded this factor. Similar situations exist in other elements of indirect cost.

More precise measurements would be prohibitively expensive, but the favorable position of the government in this respect should not be lost sight of.

Variations in Rates of Institutions

Indirect cost rates differ from institution to institution for valid reasons. True differences in actual aggregate costs only partly explain the variations.

Rates vary because of differences in the base used for application of the rates. Some institutions use a base of

[1] Raymond J. Woodrow, *Indirect Costs in Universities*, Special Report of the American Council on Education, March 1976. Also published as NACUBO Administrative Service Supplement 4:5:1.

1995

salaries and wages, others use salaries and wages plus staff benefits, and others use modified total direct costs.

Variations are also attributable to differences in the classification of direct costs vs. indirect costs — variations which are associated with the diverse characteristics of the institutions themselves. Universities vary in nature, organizational structure and physical features; in the extent of centralization or decentralization; and in the philosophy of how services should be delivered. Each has adopted a style of management and operation construed to best fit its needs.

Costing systems must fit the characteristics of the institution, so they too differ from university to university. In one institution reproduction service may be an indirect cost; in another institution each job may be priced out as a direct cost of the activity using the service. Ine one institution the cost of basic telephone service may be treated as a direct charge; in another institution it may be an indirect cost similar to other utilities. Such differences are legitimate and necessary, paralleling differences in the management control systems of the institutions.

A valid comparison of the indirect cost rates of different institutions can only be made with knowledge of the differences existing in the elements and bases of the rates. As a matter of principle, a comparison of total costs tends to be more reliable than a comparison of indirect cost rates, However, comparison of total costs is of limited utility when evaluating research projects because of the uniqueness of most individual projects.

Variation in the indirect cost rates from one university to another has brought pressure from the government for more uniformity in the costing process. While *some* additional degree of uniformity may be attainable, complete standardization cannot be reached. Institutions will continue to have differences that are reflected in indirect cost rates. A 1969 report of the General Accounting Office said:

> It is not feasible to determine indirect costs by a fixed method or procedure applied uniformly under all conditions.[2]

Relative Increase in Indirect Costs

The fact that indirect costs have increased at a more rapid rate than direct costs in the past few years has led to apprehension in government circles. Indeed the relative increase has also been of great concern to university administrators and faculty members, for it has eroded program funds for both instruction and research.

In March 1976 Charles V. Kidd, executive secretary of the Association of American Universities, furnished the House Committee on Appropriations an explanation of the reasons indirect costs had increased faster than direct costs.[3] He reported that the substantial costs incurred by universities in carrying out social programs mandated by the federal government have principally affected indirect costs rather than direct costs. He pointed to affirmative action and equal pay programs, the Occupational Safety and Health Act, provisions regarding age discrimination, environmental protection programs, safeguards placed on experimentation with radioactive materials, and programs for the protection of human subjects and animals.

Kidd showed that faculty compensation, which principally affects direct cost, rose 52 percent from 1968 to 1975, while nonpersonnel costs, which principally affect indirect costs, rose 88 percent during the same period. One nonpersonnel cost — the cost of utilities including particularly the cost of fuel — skyrocketed during the period. Almost without exception the cost of fuel is included in indirect cost. Physical plant costs, which include the cost of fuel and other utilities, increased 122 percent.

Another factor contributing to higher indirect costs has been the additional administrative costs incurred by universities in response to the increasingly restrictive requirements imposed by the government for documentation of charges to federal contracts and grants. As the government has demanded more precision in accounting it has been necessary for universities to allocate more resources to administration, thereby raising indirect costs.

The cost increases described above have primarily affected indirect costs and have been imposed by forces outside the control of the institutions.The institutions have been put in the position of having to defend to the government cost increases that to a considerable extent have been forced on them by the government itself.

In disregard of the role of the government in causing the cost increases, some federal sources have threatened to curtail reimbursements of what they perceive as runaway costs. It would appear that, while the government can compel an institution to carry out an expensive new social program, the government may be unwilling to bear the resultant increase in the cost of federal research.

Alleged Waste and Inefficiency

The cynicism with which indirect costs are viewed in some quarters surfaces again when assertions of waste and inefficiency are directed at the rise in the costs.

Indirect cost rates are falsely considered to be measures of efficiency by some individuals. This concept has been refuted repeatedly, but still recurs. The 1969 GAO report stated the point clearly:

> These rates do not measure, and should not be used to evaluate, the relative efficiency of research efforts. Rather, the overhead rates are used solely to determine the in-

[2] GAO Report B-117219, *Study of Indirect Cost of Federally Sponsored Research Primarily by Educational Institutions*, June 12, 1969.

[3] Charles V. Kidd, *Why Are Indirect Cost Rates for Federal Research Grants and Contracts with Universities Increasing?* A Report to the House Committee on Appropriations, Association of American Universities, March 16, 1976.

> direct portion of the total cost of research; and they will vary in view of the differing nature of research, the variety of organizational structures and operations, and the different types of research facilities involved.

In contrast to the conclusions of GAO, the Survey and Investigations Staff of the House Committee on Appropriations viewed increases in indirect cost rates as evidence of inefficiency and waste. A report of the investigations staff asserted that:

> There is no pressing incentive for a grantee to reduce overhead costs under the present system of establishing indirect cost rates. On the contrary, the system may encourage inefficiency, as the federal government will pay a share of the indirect costs of the grantee.[4]

This assertion is unfounded — the system does *not* work to encourage inefficiency. Only a fraction of the indirect cost incurred by universities is reimbursed by the federal government. Last year at one university, believed to be typical, the federal government reimbursed only 17 percent of the total indirect cost incurred in connection with all functions throughout the institution. For every dollar of indirect cost, 83 cents had to be paid by funds obtained from other sources.

As pressed as institutions have been to maintain their educational programs in the face of higher prices and limited revenues, they have been highly motivated to effect economies wherever possible. Universities have been conducting self-examinations leading to adjustments in operations. They know very well that every increase in indirect cost is only reimbursed in part by the federal government and that the remainder must be funded by other sources.

A proposal has been made for an incentive system whereby an institution would be rewarded for reduction in the indirect cost rate by being permitted to retain a portion of the savings, and would be penalized for an increase in the rate by being assessed a portion of the government's share of the increase. This proposal ignores the existing inducements to economize that were explained above. It would encourage institutions to convert some indirect costs into direct costs, which could only be done by incurring additional administrative costs, thereby boosting total costs. Penalizing an institution for incurring higher indirect costs imposed on it by governmental requirements would be grossly inequitable. It would undermine an institution's motivation to comply with important federally mandated social programs, such as affirmative action and OSHA.

Proposal for Competitive Cost Bidding

The Conference Committee of the Senate and House Committees on Appropriation in its report on August 3, 1976, urged that consideration be given to interjecting a system of cost competition in the grant approval process. This proposal arose from Congressional concern about the increase in indirect costs, but the record contained no indication of whether the competition contemplated would be based on indirect cost rates or on total costs. Competition based on indirect cost rates would be fraught with numerous weaknesses, as outlined earlier in this writing and as implied in the 1969 GAO report, because indirect cost rates are not comparable among institutions for valid reasons. Awards based on indirect cost rates would lend encouragement to classifying costs as direct instead of indirect, thereby adding to the cost of administration and to total cost.

Competition based on total cost would escape some of the pitfalls inherent in comparing indirect cost rates. However, the government should proceed carefully in deliberation of any method of primarily awarding research agreements based on lowest cost. A premise that the government receives more value dollar-for-dollar from a low-cost research project than it does from a high-cost project is not always valid, for the quality of research results is directly related to the competency of the researchers and the support they receive.

The purpose of research is to expand the limits of knowledge and to apply the results to the benefit of the nation. It is the expectation of the accomplishment of this objective that should be related to the cost. The most productive scientist may be the one who has a distinguished record of achievements and years of experience. He or she is paid a commensurate salary and may need sophisticated equipment (which uses large quantities of expensive power) and may require considerable support services. In contrast, a less competent scientist (at perhaps a lower salary), or a scientist with inadequate facilities or support, cannot be expected to be so productive. The prospect for valuable results is much greater with the first scientist than with the second.

While the nation awaits scientific breakthroughs in numerous areas of research, it would be a serious mistake to allow cost competition to downgrade the award process from the present system of competition primarily based on technical merit. Any further attention to this concept should include thorough evaluation of the potential results by the scientific community.

Recent History

The following is a review of developments in recent years relating to cost reimbursements.

1969 GAO Report on Indirect Cost

In its report on indirect cost, the General Accounting Office in 1969 observed that the determination of indirect cost must be tailored to the individual circumstances of the institutions, and hence cannot be made uniform. It pointed out that:

[4] *Overhead Reimbursement to Grantees and Contractors — Department of Health, Education, and Welfare,* dated March 1975, released February 12, 1976.

> The same kinds of cost are properly treated as direct costs in some circumstances and as indirect costs in others. . . . However, the total cost should not be affected by the fact that a cost element is charged directly or indirectly.

GAO did not believe that a statutory limit on indirect cost would permit a realistic reimbursement of indirect cost based on sound accounting principles. It said that a limitation could cause institutions to take steps to identify more costs as direct, which could result in greater overall cost of operations and greater expense to the government. GAO also explained that:

> The wide variations which exist in overhead rates do not indicate that an institution with a higher rate is less efficient than one with a lower rate or that the total cost of research is greater. Further, high rates do not mean that the government is paying profit, fees, or subsidy to the institutions.

1969 PMM Report on Indirect Cost

Also in 1969, the public accounting firm of Peat, Marwick, Mitchell & Co. (PMM), in a report commissioned by the American Council on Education,[5] concluded, as did GAO, that there was a limitation to the degree to which indirect cost rates could be determined uniformly; that provision must always be made for fundamental differences among universities which, in turn, will continue to cause different rates to be computed.

Expressing another concept consistent with the GAO report, PMM said that an indirect cost rate cannot be used as a measure of the relative cost to support research. It found that categorizing more costs as direct costs instead of indirect costs led to a higher reimbursements of total costs.

Observing that the initial concern which gave rise to the study was the possibility that universities might be profiting unfairly from federally funded research projects, PMM reported that its findings indicated exactly the opposite. It explained that:

> Because of the cost allocation principles which are applied uniquely to educational institutions, the universities are not recovering costs which are important to their ability to sustain a desirable research capability.

The Intervening Years

Despite the perspectives offered by the GAO and PMM reports, some sources, including those in Congress, have continued to express doubts about the reasonableness of reimbursing indirect costs. The institutions have persistently appealed for an equitable policy of reimbursement.

A number of developments in the last few years have gradually changed the nature of the fiscal relationship between the government and the institutions. In many aspects of public and commercial activity, enhanced standards of accountability became the order of the day. That development, combined with pressures to reduce federal expenditures, led federal auditors and negotiators to place increasingly rigid interpretations on the regulations and to insist on higher standards of accounting, reporting and supporting documentation on the part of universities. The ability to respond promptly varied from institution to institution. Some of them had not put great emphasis on accounting and administrative procedures because they had placed high priority on other needs in their operations.

The degree of criticism contained in federal audit reports grew much more severe. At times federal officials attempted to apply policies which went beyond the requirements of FMC 73-8, or to apply increased standards of accountability retroactively. These attempts were resisted by the institutions. In a number of instances, disallowances by federal officials, although small in relation to the total programs, imposed additional fiscal burdens on the institutions.

Convinced that audit criticism was rooted both in more rigid requirements imposed by federal auditors and in substandard practices at some institutions, the organizations representing higher education moved to correct the latter condition. In the early months of 1976, officials of higher education organizations advised presidents and chancellors to take a personal interest in the costing practices of their institutions and to assure that prompt steps were taken as needed to improve them. Audit information has been exchanged monthly among major universities since September 1974. Programs in the financial management of contracts and grants have been presented for both top level academic and financial officials, in recognition that the commitment of each sector is necessary for effective results. Other national programs have been offered to enhance institutional competence in determining indirect cost rates.

The institutions have become concerned that the insistence of federal officials on more precision in costing has diverted resources from programs to administration, thereby increasing indirect cost.

Meanwhile individuals in the government have become uneasy about the relative growth of indirect costs. As noted earlier, the cause of the increase is due in part to factors outside the institutions, including programs mandated by the federal government itself. The higher level of precision and documentation now required by federal auditors adds to the level of indirect costs. Moreover, the institutions are caught in a squeeze between cost increases brought on by inflation and other factors, and less than adequate increases in revenue. Hence they have been motivated to pursue more vigorously their legitimate claims for adequate recovery of indirect costs.

1975 Congressional Investigations Staff Report

In March 1975 a report on indirect cost by the Surveys and Investigations Staff of the House Committee on Appropriations became available to members of that Com-

[5] *Variations in Research Indirect Cost Rates — A Study of Six Universities*, February 14, 1969.

mittee, although it was not publicly released until February 1976. The Committee had instructed the staff to determine how effectively DHEW had negotiated indirect cost rates, to review the efforts of DHEW to control the expansion of indirect costs, and to recommend means of preventing indirect cost payments from increasing beyond the estimated 1974 level of 25 percent of funds appropriated for contracts and grants.

The resultant staff report was prepared apparently without contact with any university. The report criticized DHEW for failing to control the increase in indirect costs. It gave no recognition to the fact that the growth in indirect cost was in part the result of federally mandated social programs affecting higher education. The investigations staff was convinced that grantees were not motivated toward efficiency and frugality, but did not provide evidence to support the contention.

While the report stated without qualification that indirect costs are real costs and acknowledged that grantees made contributions to the projects when they were not reimbursed for full indirect costs, it added that benefits from federal research accrue to universities in prestige, quality of instruction and attraction of qualified faculty members. The report failed to recognize the duplication of payments for side benefits when universities are subject to both cost sharing and shortfalls in the recovery of indirect cost.

1975 and 1977 DHEW Proposals to Change Cost Principles

Presumably motivated by the Congressional investigations staff report and growing concern in the Congress about indirect costs, DHEW in September 1975 proposed major changes in the cost principles contained in FMC 73-8. The proposed changes would severely curtail reimbursements of indirect costs to universities. The proposal would force the institutions to absorb from their own scarce resources a much larger share of the cost of federal programs. It would reduce federal expenditures without reducing federal programs. There is no evidence of the government giving any consideration to moderation of its own actions which cause costs to rise. In fact, the proposed changes to FMC 73-8 would further add to the costs of operating the institutions, diverting even greater resources from programs to administrative processes.

Analyses made by eight major research universities showed that the effect on them would be an average reduction of 40 percent in the recovery of indirect cost from the federal government. By extrapolation, for higher education as a whole, an additional $250 million to $300 million a year of the costs of federal programs would be imposed on the institutions, further eroding funds for instructional and other programs. As might be expected, the higher education community protested vehemently against the proposal.

In January 1977 DHEW released a revised proposal. Preliminary analysis at three universities indicated the revised proposal would reduce indirect cost reimbursement by an average of 30 percent. By extrapolation, cost recovery by higher education as a whole would be decreased by $190 million to $225 million per year.

1976 Proposal of Universities

Following receipt of the 1975 DHEW proposal, representatives of higher education developed a parallel proposal for revision of FMC 73-8. The document, prepared by the NACUBO Committee on Governmental Relations, was submitted to the Office of Management and Budget and to DHEW on August 4, 1976.

It included a number of provisions sought by DHEW as well as certain provisions requested by the institutions. The committee believed its proposal to be based on sound cost principles. It viewed some parts of the DHEW proposal as departures from cost principles, substituting limits of allowable costs instead.

1976 Statements of the Congress

The Congress gave renewed attention to indirect costs of universities in deliberations on 1977 appropriations for DHEW. On June 2, 1976 the report of the House Committee on Appropriations reiterated concern about the relative growth in indirect costs and urged DHEW to devote greater attention to assuring that the costs are strictly associated with federal grants and contracts. The Committee stated its firm objective that appropriations be devoted to direct research efforts to the maximum degree feasible. It asked DHEW to explore the possibility of including cost competition in the grant approval process. The report of the Senate committee did not discuss the subject of indirect cost.

The Conference Committee report on August 3, 1976 was considerably more compulsive in tone. It spoke of funds being "diverted" to pay overhead costs and stated that:

> It is thus imperative that the Department work closely with the Office of Management and Budget and other federal agencies, to undertake revisions in the indirect cost mechanism which will result in a significant reduction in funds being diverted into indirect costs.

The Conference report was discussed on the floor of the Senate on August 25, 1976. Senator Mathias, concerned about the wording, referred to the provisions of the earlier House report as "a workmanlike, equitable, and wholly acceptable approach." He added:

> We do not want universities to make a profit on federal research and we do not want them to take a loss. We want prudent and economical administration. We should not prejudge the outcome of these technical discussions by deciding what the true costs of research are before the professional judgments are made. What we need is an approach that is fair to the government and to the

> universities. This is the principle that should guide HEW in preparing the material called for in the conference report.

Senator Bayh responded that the statement of Senator Mathias was consistent with the intent of the Conference Committee.

The Situation Today

The Office of Management and Budget has the responsibility for considering the proposals for changes to the cost principles as developed by DHEW and by higher education, and for developing its own proposal for review by the agencies and institutions. It is expected that the new Congress will give renewed attention to the subject of cost reimbursement to universities.

Position of Higher Education

The concluding portion of this paper is a description of the author's concept of what should be the position of the higher education community on cost reimbursement. It is this:

1. Equity calls for reimbursement of direct and indirect costs on the basis of sound cost principles without arbitrary limitations.
2. Equity calls for discontinuation of arbitrary requirements regarding the extent of cost sharing by universities.
3. Cost sharing by an institution — commensurate with its interest in a project or activity, the benefit to be derived by it and its capacity to contribute — should be voluntary and outside the terms of agreement.

A realignment of federal policy based on these principles would lead to an environment in which the government pays full costs, and would reduce the erosion of institutional resources diverted from instruction and other activities to federal programs. Implementation of these principles would fulfill the objectives stated by Senator Mathias:

> We do not want universities to make a profit on federal research and we do not want them to take a loss.

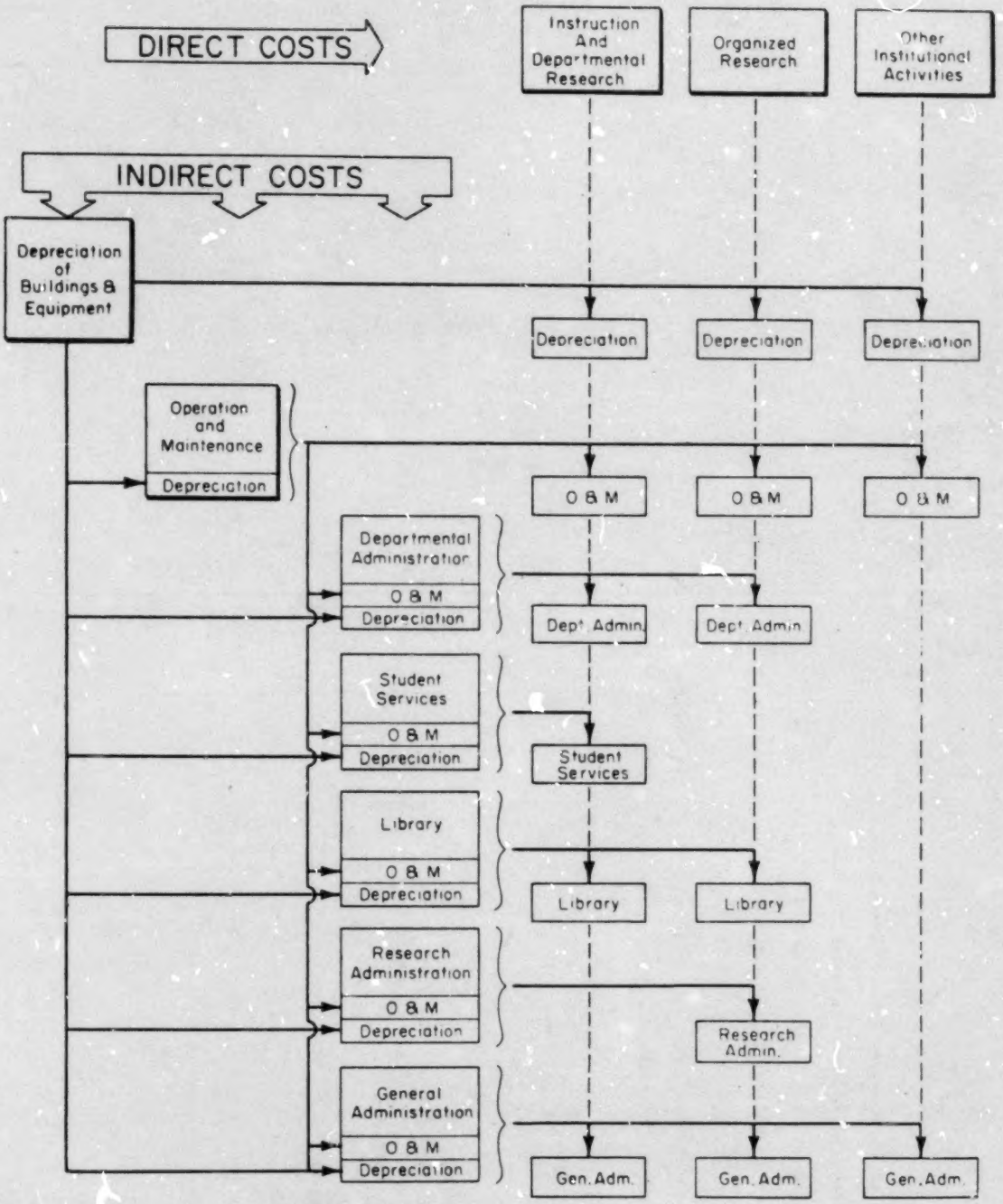
Not all members of the higher education community are in full agreement with the principles given above. Some conceive that because there are educational benefits derived from performing government research, the institutions should absorb part of the costs from other institutional funds. Some faculty members who are principal investigators on federal projects understandably would prefer more funds to be available for the direct costs, which they control, of their research projects. Also they may not appreciate the effect that a shortfall in full cost reimbursement has on the overall financial condition of institutions. Universities are endeavoring to bring about a better understanding by the faculty of the role of full cost recovery.

Higher education is committed to continue its efforts to assure that acceptable standards of accountability are practiced by the institutions. At the same time the government is urged to exercise restraint so that standards are limited to those that are necessary, reasonable and practical, and do not impose unwarranted costs on the operations of the institutions.

In order for higher education to fulfill the institutional goals of quality research in harmony with instructional programs, and in order to assure the financial stability of the institutions on which the nation depends for part of its research effort, it is vital that the government carry out an equitable policy of full reimbursement of the direct and indirect costs of federal programs.

GENERAL INFORMATION
NACUBO
1 P.

Diagram Showing Three Primary Cost Categories for Major Universities



SAMPLE INDIRECT COST PROPOSAL FORMAT (LONG FORM)*

_____University

Fiscal Year Ended June 30, 19__

ALLOCATION OF LIBRARY

Schedule 7

Current Expenditures - Library (Schedule 12)	$2,248,562
Building Use Allowance (Schedule 3)	155,880
Equipment Use Allowance (Schedule 4)	104,274
Operation & Maintenance (Schedule 5)	678,664
General & Administrative (Schedule 6)	357,976
Books Purchased & Not Included Above as Current Expenditures	733,353
Total to be Allocated	$4,279,409

Basis of Allocation - Population

Group	Population(2)	Percentage	Research	Educational Service Agreements	All Other	Total
Faculty:						
Instruction	2,681	10.89%			$466,028	$466,028
Research	361	1.47	$62,907			62,907
Educational Service Agreements	230	.93		$39,799		39,799
Public Service	110	.45			19,257	19,257
Graduate Students:						
Educational Service Agreements	51	.21		8,987		8,987
Research	136	.55	23,537			23,537
Regular	1,607	6.53			279,445	279,445
Undergraduate	18,804	76.41			3,269,896	3,269,896
Outside Users	538	2.19			93,719	93,719
Research Workers(1)	90	.37	15,834			15,834
	24,608	100%	$102,278	$48,786	$4,128,345	$4,279,409
			To Schedule 1	To Schedule 2		

(1) Only include individuals equivalent to professional and professional staff; this does not include technicians, secretarial, and clerical type workers.

(2) Population figures have been adjusted to full-time equivalents where an individual is represented by more than one line item category.

*This is a sample only and is not intended to prescribe methods for charging costs nor the order of precedence for allocating costs.

GENERAL INFORMATION
HEW
1 P. (to be amended)

GENERAL INFORMATION
HEW
5 PP. (to be amended)

ATTACHMENT A
Federal Management Circular 73-8
December 19, 1973

PRINCIPLES FOR DETERMINING COSTS APPLICABLE TO RESEARCH AND DEVELOPMENT UNDER GRANTS AND CONTRACTS WITH EDUCATIONAL INSTITUTIONS

A. Purpose and Scope.

1. *Objectives.* This Circular provides principles for determining the costs applicable to research and development work performed by educational institutions under grants from and contracts with the Federal Government. These principles are confined to the subject of cost determination and make no attempt to identify the circumstances or dictate the extent of agency and institutional participation in the financing of a particular research or development project. The principles are designed to provide recognition of the full allocated costs of such research work under generally accepted accounting principles. No provision for profit or other increment above cost is intended.

2. *Policy guides.* The successful application of these principles requires development of mutual understanding between representatives of universities and of the Federal Government as to their scope, implementation, and interpretation. It is recognized that—

a. The arrangements for agency and institutional participation in the financing of a research and development project are properly subject to negotiation between the agency and the institution concerned in accordance with such Government-wide criteria as may be applicable.

b. Each college and university, possessing its own unique combination of staff, facilities and experience, should be encouraged to conduct research in a manner consonant with its own academic philosophies and institutional objectives.

c. Each institution, in the fulfillment of its obligations, should employ sound management practices.

d. The application of the principles established herein should require no significant changes in the generally accepted accounting practices of colleges and universities.

e. Cognizant Federal agencies involved in negotiating indirect cost rates and auditing should assure that institutions are generally applying the cost principles and standards herein provided on a consistent basis. Where wide variations exist in the treatment of a given cost item among institutions, the reasonableness and equitableness of such treatments should be fully considered during the rate negotiations and audit.

3. *Application.* All Federal agencies that sponsor research and development work at educational institutions should apply these principles and related policy guides in determining the costs incurred for such work under any type of research and development agreement. These principles should also be used as a guide in the pricing of fixed price contracts or lump sum agreements.

B. Definition of Terms.

1. *Organized research* means all research activities of an institution that are separately budgeted and accounted for.

2. *Departmental research* means research activities that are not separately budgeted and accounted for. Such research work, which includes all research activities not encompassed under the term *organized research,* is regarded for purposes of this document as a part of the instructional activities of the institution.

3. *Research agreement* means any valid arrangement to perform federally sponsored research, including grants, cost-reimbursement type contracts, cost-reimbursement type subcontracts, and fixed-price contracts and subcontracts for research.

4. *Other institutional activities* means all organized activities of an institution not directly related to the instruction and research functions, such as residence halls, dining halls, student hospitals, student unions, intercollegiate athletics, bookstores, faculty housing, student apartments, guest houses, chapels, theaters, public museums, and other similar activities or auxiliary enterprises. Also included under this definition is any other category of cost treated as "unallowable," provided such category of cost identifies a function or activity to which a portion of the institution's indirect costs (as defined in section E.1.) are properly allocable.

5. *Apportionment* means the process by which the indirect costs of the institution are assigned as between (a) instruction and research, and (b) other institutional activities.

6. *Allocation* means the process by which the indirect costs apportioned to instruction and research are assigned as between (a) organized research, and (b) instruction, including departmental research.

7. *Stipulated salary support* is a fixed or a stated dollar amount of the salary of professorial or other professional staff involved in the conduct of research which a Government agency agrees in advance to reimburse an educational institution as a part of sponsored research costs.

C. **Basic Considerations.**

1. *Composition of total costs.* The cost of a research agreement is comprised of the allowable direct costs incident to its performance, plus the allocable portion of the allowable indirect costs of the institution, less applicable credits as described in section C.5.

2. *Factors affecting allowability of costs.* The tests of allowability of costs under these principles are: (a) they must be reasonable; (b) they must be allocable to research agreements under the standards and methods provided herein; (c) they must be accorded consistent treatment through application of those generally accepted accounting principles appropriate to the circumstances; and (d) they must conform to any limitations or exclusions set forth in these principles or in the research agreement as to types or amounts of cost items.

3. *Reasonable costs.* A cost may be considered reasonable if the nature of the goods or services acquired or applied, and the amount involved therefor, reflect the action that a prudent person would have taken under the circumstances prevailing at the time the decision to incur the cost was made. Major considerations involved in the determination of the reasonableness of a cost are: (a) whether or not the cost is of a type generally recognized as necessary for the operation of the institution or the performance of the research agreement; (b) the restraints or requirements imposed by such factors as arm's-length bargaining, Federal and State laws and regulations, and research agreement terms and conditions; (c) whether or not the individuals concerned acted with due prudence in the circumstances, considering their responsibilities to the institution, its employees, its students, the Government, and the public at large; and (d) the extent to which the actions taken with respect to the incurrence of the cost are consistent with established institutional policies and practices applicable to the work of the institution generally, including Government research.

4. *Allocable costs.*

a. A cost is allocable to a particular cost objective (i.e., a specific function, project, research agreement, department, or the like) if the goods or services involved are chargeable or assignable to such cost objective in accordance with relative benefits received or other equitable relationship. Subject to the foregoing, a cost is allocable to a research agreement if it is incurred solely to advance the work under the research agreement; or it benefits both the research agreement and other work of the institution in proportions that can be approximated through use of reasonable methods; or it is necessary to the overall operation of the institution and, in the light of the standards provided in this Circular, is deemed to be assignable in part to organized research. Where the purchase of equipment or other capital items is specifically authorized under a research agreement, the amounts thus authorized for such purchases are allocable to the research agreement regardless of the use that may subsequently be made of the equipment or other capital items involved.

b. Any costs allocable to a particular research agreement under the standards provided in this Circular may not be shifted to other research agreements in order to meet deficiencies caused by overruns or other fund considerations, to avoid restrictions imposed by law or by terms of the research agreement, or for other reasons of convenience.

5. *Applicable credits.*

a. The term applicable credits refers to those receipt or negative expenditure types of transactions which operate to offset or reduce expense items that are allocable to research agreements as direct or indirect costs. Typical examples of such transactions are: purchase discounts, rebates, or allowances; recoveries or indemnities on losses; sales of scrap or incidental services; and adjustments of overpayments or erroneous charges.

b. In some instances, the amounts received from the Federal Government to finance institutional activities or service operations should be treated as applicable credits. Specifically, the concept of netting such credit items against related expenditures should be applied by the institution in determining the rates or amounts to be charged to Government research for services rendered whenever the facilities or other resources used in providing such services have been financed directly, in whole or in part, by Federal funds. (See sections F.6., J.10.b., and J.37. for areas of potential application in the matter of direct Federal financing.)

6. *Costs incurred by State and local governments.* Costs incurred or paid by State or local governments in behalf of educational institutions for certain personnel benefit programs such as pension plans, FICA and any other costs specifically disbursed in behalf of and in direct benefit to the institutions, are allowable costs of such institutions whether or not these costs are recorded in the accounting records of such institutions, subject to the following:

a. Such costs meet the requirements of sections C.1. through C.5.

b. Such costs are properly supported by cost allocation plans in accordance with Federal Management Circular 74-4.

c. Such costs are not otherwise borne directly or indirectly by the Federal Government.

D. **Direct Costs.**

1. *General.* Direct costs are those costs which can be identified specifically with a particular research project, an instructional activity or any other institutional activity or which can be directly assigned to such activities relatively easily with a high degree of accuracy.

2. *Application to research agreements.* Identifiable benefit to the research work rather than the nature of the goods and services involved is the determining factor

in distinguishing direct from indirect costs of research agreements. Typical transactions chargeable to a research agreement as direct costs are the compensation of employees for performance of work under the research agreement, including related staff benefit and pension plan costs to the extent that such items are consistently treated by the educational institution as direct rather than indirect costs; the costs of materials consumed or expended in the performance of such work; and other items of expense incurred for the research agreement, including extraordinary utility consumption. The cost of materials supplied from stock or services rendered by specialized facilities or other institutional service operations may be included as direct costs of research agreements provided such items are consistently treated by the institution as direct rather than indirect costs and are charged under a recognized method of costing or pricing designed to recover only actual costs and conforming to generally accepted cost accounting practices consistently followed by the institution.

E. Indirect Costs.

1. *General.* Indirect costs are those that have been incurred for common or joint objectives and therefore cannot be identified specifically with a particular research project, an instructional activity or any other institutional activity. At educational institutions such costs normally are classified under the following functional categories: general administration and general expenses; research administration expenses; operation and maintenance expenses; library expenses; and departmental administration expenses.

2. *Criteria for distribution.*

a. *Base period.* A base period for distribution of indirect costs is the period during which such costs are incurred and accumulated for distribution to work performed within that period. The base period normally should coincide with the fiscal year established by the institution, but in any event the base period should be so selected as to avoid inequities in the distribution of costs.

b. *Need for cost groupings.* The overall objective of the allocation and apportionment process is to distribute the indirect costs described in section F to organized research, instruction, and other activities in reasonable proportions consistent with the nature and extent of the use of the institution's resources by research personnel, academic staff, students, and other personnel or organizations. In order to achieve this objective, it may be necessary to provide for selective distribution by establishing separate groupings of cost within one or more of the functional categories of indirect costs referred to in section E.1. In general, the cost groupings established within a functional category should constitute, in each case, a pool of those items of expense that are considered to be of like character in terms of their relative contribution to (or degree of remoteness from) the particular cost objectives to which distribution is appropriate. Cost groupings should be established considering the general guides provided in c. below. Each such pool or cost grouping should then be distributed individually to the appertaining cost objectives, using the distribution base or method most appropriate in the light of the guides set out in d. below.

c. *General considerations on cost groupings.* The extent to which separate cost groupings and selective distribution would be appropriate at an institution is a matter of judgment to be determined on a case-by-case basis. Typical situations which may warrant the establishment of two or more separate cost groups (based on account classification or analysis) within a functional category include but are not limited to the following:

(1) Where certain items or categories of expense relate solely to one of the three major divisions of the institution (instruction, organized research or other institutional activities) or to any two but not the third, such expenses should be set aside as a separate cost grouping for direct assignment or selective distribution in accordance with the guides provided in b. above and d. below.

(2) Where any types of expense ordinarily treated as general administration and general expenses or departmental administration expenses are charged to research agreements as direct costs, the similar type expenses applicable to other activities of the institution must, through separate cost groupings, be excluded from the indirect costs allocable to those research agreements and included in the direct cost of other activities for cost allocation purposes.

(3) Where it is determined that certain expenses are for the support of a service unit or facility whose output is susceptible of measurement on a workload or other quantitative basis, such expenses should be set aside as a separate cost grouping for distribution on such basis to organized research and other activities at the institution or within the department.

(4) Where organized activities (including identifiable segments of organized research as well as the activities cited in section B.4.) provide their own purchasing, personnel administration, building maintenance or similar service, the distribution of general administration and general expenses or operation and maintenance expenses to such activities should be accomplished through cost groupings which include only that portion of central indirect costs (such as for overall management) which are properly allocable to such activities.

(5) Where the institution elects to treat as indirect charges the cost of the pension plan and other staff benefits, such costs should be set aside as a separate cost grouping for selective distribution to appertaining cost objectives, including organized research.

(6) The number of separate cost groupings within a functional category should be held within practical limits, after taking into consideration the materiality of the amounts involved and the degree of precision attainable through less selective methods of distribution.

d. *Selection of distribution method.*

(1) Actual conditions must be taken into account in selecting the method or base to be used in distributing to applicable cost objectives the expenses assembled under each of the individual cost groupings established as indicated under b. above. Where a distribution can be made by assignment of a cost grouping directly to the area benefited, the distribution should be made in that manner. Where the expenses under a cost grouping are more general in nature, the distribution to appertaining cost objectives should be made through use of a selected base which will produce results that are equitable to both the Government and the institution. In general, any cost element or cost-related factor associated with the institution's work is potentially adaptable for use as a distribution base provided (a) it can readily be expressed in terms of dollars or other quantitative measure (total direct expenditures, direct salaries, man-hours applied, square feet utilized, hours of usage, number of documents processed, population served, and the like); and (b) it is common to the appertaining cost objectives during the base period.

(2) Results of cost analysis studies may be used when they result in more accurate and equitable distribution of costs. Such cost analysis studies may take into consideration weighting factors, population, or space occupied if they produce equitable results. Cost analysis studies, however, should (a) be appropriately documented in sufficient detail for subsequent review by the cognizant Federal agency, (b) distribute the indirect costs to the appertaining cost objectives in accord with the relative benefits derived, (c) be conducted to fairly reflect the true conditions of the activity and to cover representative transactions for a reasonable period of time, (d) be performed specifically at the institution at which the results are to be used, and (e) be updated periodically and used consistently. Any assumptions made in the study will be sufficiently supported. The use of cost analysis studies and periodic changes in the method of cost distribution must be fully justified.

(3) The essential consideration in selection of the distribution base in each instance is that it be the one best suited for assigning the pool of costs to appertaining cost objectives in accord with the relative benefits derived; the traceable cause and effect relationship; or logic and reason, where neither benefit nor cause and effect relationship is determinable.

3. *Administration of limitations on allowances for research costs.* Research agreements may be subject to statutory or administrative policies that limit the allowance of research costs. When the maximum amount allowable under a statutory limitation or the terms of a research agreement is less than the amount otherwise reimbursable under this Circular, the amount not recoverable under that research agreement may not be charged to other research agreements.

F. Identification and Assignment of Indirect Costs.

1. *General administration and general expenses.*

a. The expenses under this heading are those that have been incurred for the general executive and administrative offices of educational institutions and other expenses of a general character which do not relate solely to any major division of the institution; i.e., solely to (1) instruction, (2) organized research, or (3) other institutional activities. The general administration and general expense category should also include the staff benefit and pension plan costs applicable to the salaries and wages included therein, an appropriate share of the costs of the operation and maintenance of the physical plant, and charges representing use allowances and/or depreciation applicable to the buildings and equipment utilized in performing the functions represented thereunder.

b. The expenses included in this category may be apportioned and allocated on the basis of total expenditures exclusive of capital expenditures in situations where the results of the distribution made on this basis are deemed to be equitable both to the Government and the institution; otherwise the distribution of general administration and general expenses should be made through use of selected bases applied to separate cost groupings established within this category of expenses in accordance with the guides set out in section E.2.d.

2. *Research administration expenses.*

a. The expenses under this heading are those that have been incurred by a separate organization or identifiable administrative unit established solely to administer the research activity, including such functions as contract administration, security, purchasing, personnel administration, and editing and publishing of research reports. They include the salaries and expenses of the head of such research organization, his assistants, and their immediate secretarial staff together with the salaries and expenses of personnel engaged in supporting activities maintained by the research organization, such as stock rooms, stenographic pools, and the like. The salaries of members of the professional staff whose appointments or assignments involve the performance of such administrative work may also be included to the extent that the portion so charged to research administration is supported as required by section J.7. The research administration expense category should also include the staff benefit and pension plan costs applicable to the salaries and wages included therein, an appropriate share of the costs of the operation and maintenance of the physical plant, and charges representing use allowance and/or depreciation applicable to the buildings and equipment utilized in performing the functions represented thereunder.

b. The expenses included in this category should be allocated to organized research and, where necessary, to departmental research or to any other benefiting activities on any basis reflecting the proportion fairly applicable to each. (See section E.2.d.)

3. *Operation and maintenance expenses.*

a. The expenses under this heading are those that have been incurred by a central service organization or at the departmental level for the administration, supervision, operation, maintenance, preservation, and protection of the institution's physical plant. They include expenses normally incurred for such items as janitorial and utility services; repairs and ordinary or normal alterations of buildings, furniture and equipment; and care of grounds and maintenance and operation of buildings and other plant facilities. The operation and maintenance expense category should also include the staff benefit and pension plan costs applicable to the salaries and wages included therein, and charges representing use allowance and/or depreciation applicable to the buildings and equipment utilized in performing the functions represented thereunder.

b. The expenses included in this category should be apportioned and allocated to applicable cost objectives in a manner consistent with the guides provided in section E.2. on a basis that gives primary emphasis to space utilization. The allocations and apportionments should be developed as follows: (1) where actual space and related cost records are available or can readily be developed and maintained without significant change in the accounting practices, the amount distributed should be based on such records; (2) where the space and related cost records maintained are not sufficient for purposes of the foregoing, a reasonable estimate of the proportion of total space assigned to the various cost objectives normally will suffice as a means for effecting distribution of the amounts of operation and maintenance expenses involved; or (3) where it can be demonstrated that an area or volume of space basis of allocation is impractical or inequitable, other bases may be used provided consideration is given to the use of facilities by research personnel and others, including students.

4. *Library expenses.*

a. The expenses under this heading are those that have been incurred for the operation of the library, including the costs of books and library materials purchased for the library, less any items of library income that qualify as applicable credits under section C.5. The library expense category should also include the staff benefit and pension plan costs applicable to the salaries and wages included therein, an appropriate share of the costs of the operation and maintenance of the physical plant, and charges representing use allowances and/or depreciation applicable to the buildings and equipment utilized in the performance of the functions represented thereunder. Costs incurred in the purchases of rare books (museum-type books) with no research value should not be allocated to Government-sponsored research.

b. The expenses included in this category should be allocated on the basis of population including students and other users. Where the results of the distribution made on this basis are deemed to be inequitable to the Government or the institution, the distribution should then be made on a selective basis in accordance with the guides set out in section E.2. Such selective distribution should be made through use of reasonable methods which give adequate recognition to the utilization of the library attributable to faculty, research personnel, students and others. The method used will be based on data developed periodically on the respective institution's experience for representative periods.

5. *Departmental administration expenses.*

a. The expenses under this heading are those that have been incurred in academic deans' offices, academic departments and organized research units such as institutes, study centers and research centers for administrative and supporting services which benefit common or joint departmental activities or objectives. They include the salaries and expenses of deans or heads, or associate deans or heads, of colleges, schools, departments, divisions, or organized research units; and their administrative staffs together with the salaries and expenses of personnel engaged in supporting activities maintained by the department, such as stockrooms, stenographic pools, and the like provided such supporting services cannot be directly identified with a specific research project, with an instructional activity or with any other institutional activity. The salaries of other members of the professional staff whose appointments or assignments involve the performance of such administrative work may also be included to the extent that the portion so charged to departmental administration expenses is supported as required by section J.7. The departmental administration expense category should also include the staff benefit and pension plan costs applicable to the salaries and wages included therein, an appropriate share of the costs of the operation and maintenance of the physical plant, and charges representing use allowances and/or depreciation applicable to the buildings and equipment utilized in performing the functions represented thereunder.

b. The distribution of departmental administration expenses should be made through use of selected bases applied to cost groupings established within this category of expenses in accordance with the guides set out in section E.2.d.

6. *Setoff for indirect expenses otherwise provided for by the Government.*

a. The items to be accumulated under this heading are the reimbursements and other receipts from the Federal Government which are used by the institution to support directly, in whole or in part, any of the administrative or service (indirect) activities described in the foregoing (sections F.1. through F.5.). They include any amounts thus applied to such activities which may have been received pursuant to an institutional base grant or any similar contractual arrangement with the Federal Government other than a research agreement as herein defined (section B.3.).